

Roberta Tolve

Curriculum Vitae

University of Verona
Department of Biotechnology
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National Scientific Qualification (ASN)

- Qualified as Associate Professor in the Competitive Sector 07/F1 - Food Sciences and Technologies since 31/01/22.

Current Position (since 01/07/22)

Temporary Assistant Professor (rtDA) since July 1, 2022, for the scientific-disciplinary group 07AGRI-07 "Food Sciences and Technologies" scientific-disciplinary sector AGRI-07/A "Food Sciences and Technologies" at the Department of Biotechnology, University of Verona.

Previous Roles

Post-Doc Research Fellow

May 24, 2021 – May 23, 2022

Research activity on "Design and development of frozen vegetable products with specific nutritional characteristics and study of the interaction between packaging and consumer acceptability" in the disciplinary sector AGRI-07/A at the Department of Biotechnology, University of Verona.

January 14, 2020 – January 13, 2021

Research activity on "Production of microcapsules containing bioactive compounds extracted from food waste" in the disciplinary sector AGRI-07/A at the SAFE School of the University of Basilicata.

October 15, 2019 – October 14, 2020

Research activity on "Development of chocolate-based products fortified with bioactive compounds to improve consumer health" in the disciplinary sector AGRI-07/A at the Department of Biotechnology, University of Verona.

Education

2018

PhD in Food Science Technology and Biotechnology from the University of Basilicata. Thesis title: "Development and optimization of phytosterols microencapsulation for the formulation of chocolate-based functional foods." PhD awarded on March 1, 2018. Commission evaluation: Very positive.

2018

First Level University Master's in "Teaching, the Role of the Teacher, and the Inclusion of Students with Special Educational Needs (SEN)" at the Telematic University e-campus - Caserta. Thesis title: "Dyslexia and treatment for containing the phenomenon." Master's degree awarded on June 30, 2018, with a grade of 110/110.

2014

Second Level University Master's in "Dietetics and Nutrition" at the Catholic University of the Sacred Heart - Rome. Thesis title: "Nutritional therapy in congenital metabolic disorders."

2013

- Qualified as a Senior Biologist in the second session of state exams in 2013, at the University of Perugia.
- Master's Degree in Human Nutrition and Food Sciences, University of Perugia.
Thesis: "Role of Peptides Involved in Energy Balance Regulation in Severe Obesity."
Master's degree awarded on May 24, 2013, with a grade of 110/110 with honors.

2010

Bachelor's Degree in Food Technologies, University of Basilicata.

Thesis: "Blanching of Agri-Food Products: A Review."

Bachelor's degree awarded on April 21, 2010, with a grade of 110/110 with honors.

Experience in Institutional Roles

• 2022-present

Member of the Department Council of Biotechnology.
Member of the Teaching College for Innovation and Sustainability in Industrial Food Production – Department of Biotechnology.

• 2022-present

Member of the Faculty-Student Joint Committee in the Department of Biotechnology.

• 2022-present

Contact Person for Additional Training Obligations (OFA) ISPIA-Biotechnology.

Teaching Activities

I am actively engaged in teaching for the Professional Bachelor's Degree in Innovation and Sustainability in Industrial Food Production at the University of Verona. I am responsible for teaching "Unit Operations in Food Technologies" and coordinating the course "Project Management Laboratory." In the academic year 2022-2023, I also taught "Quality Management in the Food Industry."

Since 2015, I have held teaching positions as a subject expert at the University of Basilicata for the courses "Food Process Technology" (Bachelor's in Food Science and Technology) and "Quality Analysis and Development of Food Products" (Master's in Food Science and Technology).

I co-supervise one doctoral thesis and have supervised ten Bachelor's and Master's theses in Food Science and Technology (University of Basilicata), Agro-Food Biotechnology, and Biotechnology (University of Verona).

Research Activities

My research focuses on food technologies, especially in the development of new products with potential health benefits. Initially, I concentrated on technologies aimed at preserving bioactive compounds for food fortification through microencapsulation. This work has expanded into exploring sustainable methods such as the recovery and incorporation of by-products within the framework of a circular economy. My research interests now include the effects of using food waste in products and developing new green chemistry extraction processes to recover nutraceutical compounds from by-products.

Main National and International Scientific Collaborations

I maintain international collaborations with the University of Wolverhampton (UK) (Prof. Tchuenbou-Magaia and Prof. Iza Radecka), the University of Birmingham (Prof. Zhibing Zhang), Çanakkale Onsekiz Mart University (Çiğdem Uysal Pala), and the University of Santiago de Compostela (Prof. Letricia Barbosa Pereira). Nationally, I collaborate with research groups from universities such as the University of Basilicata, Federico II University of Naples, University of Salerno, and colleagues from the Department of Biotechnology.

Funding Obtained for Research Activities

Currently, I am the Principal Investigator of the PNRR project for Mission 4 Component 2 Investment 1.1 – funded by the European Union – NextGenerationEU under the project P2022SREL - CUP: B53D23032330001 titled "Enhancing Rice By-Products: From Recovery of Bioactive Compounds to Regeneration of Used Frying Oils.

Publications

Scientific publications in peer-reviewed indexed journals

1. Sportiello, L., Favati, F., Zanoni, M., Cazzaniga, S., Condelli, N., Marchesi, E., & **Tolve, R.** (2024). Potential of microalgae biomass as carotenoids source using natural deep eutectic solvents. *Future Foods*, 100418.
2. Sportiello, L., **Tolve, R.***, Galgano, F., Giarola, M., Musolini, S., & Favati, F. (2024). Optimizing Carotenoids NaHDES Extraction for Enhancing Spreadable Chocolate's Nutritional Value. *Food Bioscience*, 62, 105109.
3. Pasqualoni, I., **Tolve, R.**, Simonato, B., & Bianchi, F. (2024). The Impact of Selected Ingredients on the Predicted Glycemic Index and Technological Properties of Bread. *Foods*, 13(16), 2488.
4. **Tolve, R.***, Sportiello, L., Rainero, G., Pelattieri, A., Trezzi, M., & Favati, F. (2024). A Sensory Shelf-Life Study for the Evaluation of New Eco-Sustainable Packaging of Single-Portion Croissants. *Foods*, 13(9), 1390.
5. **Tolve, R.**, Zanoni, M., Ferrentino, G., Gonzalez-Ortega, R., Sportiello, L., Scampicchio, M., & Favati, F. (2024). Dietary fibers effects on physical, thermal, and sensory properties of low-fat ice cream. *LWT*, 199, 116094
6. **Tolve, R.***, & Simonato, B. (2024). Fortified Cereal-Based Foodstuffs: Technological, Sensory, and Nutritional Properties. *Foods*, 13(8), 1182
7. Matera, A., Sepe, L., Vincenzetti, S., **Tolve, R.**, Condelli, N., Claps, S., ... & Galgano, F. (2023). Impact of diet supplemented with microencapsulated condensed tannins on cow milk nutritional

profile. *International Journal of Dairy Technology*, 76(4), 813-827.

8. Galgano, F., Condelli, N., **Tolve, R.***, Scarpa, T., Caruso, M. C., Senizza, B., ... & Lucini, L. (2023). Lentil seed coat as a source of phenolic compounds: influence of geographical origin and genotype. *Journal of Food Measurement and Characterization*, 17(2), 1428-1437.
9. Sportiello, L., Favati, F., Condelli, N., Di Cairano, M., Caruso, M. C., Simonato, B., **Tolve, R.**, & Galgano, F. (2023). Hydrophobic deep eutectic solvents in the food sector: Focus on their use for the extraction of bioactive compounds. *Food Chemistry*, 405, 134703.
10. Galgano, F., Mele, M. C., **Tolve, R.**, Condelli, N., Di Cairano, M., Ianiro, G., ... & Favati, F. (2023). Strategies for Producing Low FODMAPs Foodstuffs: Challenges and Perspectives. *Foods*, 12(4), 856.
11. Cela, N., Condelli, N., Perretti, G., Di Cairano, M., **Tolve, R.**, & Galgano, F. (2023). Gluten reduction in beer: Effect of sorghum: quinoa ratio and protein rest time on brewing parameters and consumer acceptability. *Journal of Cereal Science*, 109, 103607.
12. **Tolve, R.***, Bianchi, F., Lomuscio, E., Sportiello, L., & Simonato, B. (2022). Current advantages in the application of microencapsulation in functional bread development. *Foods*, 12(1), 96.
13. **Tolve, R.**, Tchuenbou-Magaia, F. L., Sportiello, L., Bianchi, F., Radecka, I., & Favati, F. (2022). Shelf-life prediction and thermodynamic properties of no added sugar chocolate spread fortified with multiple micronutrients. *Foods*, 11(15), 2358.
14. Cela, N., Galgano, F., Perretti, G., Di Cairano, M., **Tolve, R.**, & Condelli, N. (2022). Assessment of brewing attitude of unmalted cereals and pseudocereals for gluten free beer production. *Food Chemistry*, 384, 132621.
15. Tchuenbou-Magaia, F. L., **Tolve, R.***, Anyadike, U., Giarola, M., & Favati, F. (2022). Co-encapsulation of vitamin D and rutin in chitosan-zein microparticles. *Journal of Food Measurement and Characterization*, 16(3), 2060-2070.
16. Galgano, F., **Tolve, R.***, Scarpa, T., Caruso, M. C., Lucini, L., Senizza, B., & Condelli, N. (2021). Extraction kinetics of total polyphenols, flavonoids, and condensed tannins of lentil seed coat: Comparison of solvent and extraction methods. *Foods*, 10(8), 1810.
17. **Tolve, R.**, Tchuenbou-Magaia, F., Di Cairano, M., Caruso, M.C., Scarpa, T., & Galgano, F. (2021). Encapsulation of bioactive ingredients for the formulation of functional animal feeds: the biofortification of derivate foods. *Animal Feed Science and Technology*, 279, 115036. DOI: 10.1016/j.anifeedsci.2021.115036.
18. **Tolve, R.**, Tchuenbou-Magaia, F., Verderese, D., Simonato, B., Puggia, D., Galgano, F., Zambini, A., & Favati, F. (2021). Physico-chemical and sensory acceptability of no added sugar chocolate spreads fortified with multiple micronutrients. *Food Chemistry*, 364. DOI: 10.1016/j.foodchem.2021.130386.
19. Bianchi, F., **Tolve, R.***, Rainero, G., Bordiga, M., Brennan, C. S., & Simonato, B. (2021). Technological, nutritional, and sensory properties of pasta fortified with agro-industrial by-products: a review. *International Journal of Food Science & Technology*. DOI: 10.1111/ijfs.15168.
20. Di Cairano, M. Condelli, N., Caruso, M. C., Cela, N., **Tolve, R.**, & Galgano, F. (2021). Use of Underexploited Flours for the Reduction of Glycaemic Index of Gluten-Free Biscuits: Physicochemical and Sensory Characterization. *Food and Bioprocess Technology*, 14, 1490-1502. DOI: 10.1007/s11947-021-02650-x.
21. **Tolve, R.**, Galgano, F., Condelli, N., Cela, N., Lucini, L., & Caruso, M.C. (2021). Optimization Model of Phenolics Encapsulation Conditions for Biofortification in Fatty Acids of Animal Food Products. *Foods*, 10(4), 881. DOI: 10.3390/foods10040881.
22. **Tolve, R.**, Simonato, B., Rainero, G., Bianchi, F., Rizzi, C., Cervini, M., & Giuberti, G. (2021). Wheat Bread Fortification by Grape Pomace Powder: Nutritional, Technological, Antioxidant, and Sensory Properties. *Foods*, 10 (1), 75. DOI: 10.3390/foods10010075.
23. Simonato, B., **Tolve, R.**, Rainero, G., Rizzi, C., Segà, D., Rocchetti, G., Segà, D, & Giuberti, G. (2021). Technological, nutritional, and sensory properties of durum wheat fresh pasta fortified

with *Moringa oleifera* L. leaf powder. *Journal of the Science of Food and Agriculture*, 101 (5), 1920-1925. DOI: <https://doi.org/10.1002/jsfa.10807>.

- 24. Cela, N., Condelli, N., Caruso, M. C., Perretti, G., Di Cairano, M., **Tolve, R.**, & Galgano, F. (2020). Gluten-Free Brewing: Issues and Perspectives. *Fermentation*, 6(2), 53. DOI: <https://doi.org/10.3390/fermentation6020053>.
- 25. **Tolve, R.**, Cela, N., Condelli, N., Di Cairano, M., Caruso, M. C., & Galgano, F. (2020). Microencapsulation as a tool for the formulation of functional foods: The phytosterols' case study. *Foods*, 9(4), 470.
- 26. **Tolve, R.**, Pasini, G., Vignale, F., Favati, F., & Simonato, B. (2020). Effect of Grape Pomace Addition on the Technological, Sensory, and Nutritional Properties of Durum Wheat Pasta. *Foods*, 9(3), 354. DOI: 10.3390/foods9030354.
- 27. Simonato, B., Trevisan, S., **Tolve, R.**, Favati, F., & Pasini, G. (2019). Pasta fortification with olive pomace: Effects on the technological characteristics and nutritional properties. *LWT- Food Science and Technology*, 114, 108368. DOI: 10.1016/j.lwt.2019.108368.
- 28. **Tolve, R.**, Condelli, N., Caruso, M. C., Genovese, F., Di Renzo, G. C., Mauriello, G., & Galgano, F. (2019). Preparation and characterization of microencapsulated phytosterols for the formulation of functional foods: Scale up from laboratory to semi-technical production. *Food Research International*, 116, 1274-1281. DOI: 10.1016/j.foodres.2018.10.016.
- 29. Caruso, M. C., Galgano, F., Grippo, A., Condelli, N., Di Cairano, M., & **Tolve, R.** (2019). Assay of healthful properties of wild blackberry and elderberry fruits grown in Mediterranean area. *Journal of Food Measurement and Characterization*, 1-8. DOI: 10.1007/s11694-019-00075-x.
- 30. Can, A., Ayvaz, H., Pala, Ç. U., Condelli, N., Galgano, F., & **Tolve, R.** (2018). The potential of near and mid-infrared spectroscopy for rapid quantification of oleuropein, total phenolics, total flavonoids and antioxidant activity in olive tree (*Olea europaea*) leaves. *Journal of Food Measurement and Characterization*, 12(4), 2747-2757. DOI: 10.1007/s11694-018-9892-3.
- 31. Di Cairano, M., Galgano, F., **Tolve, R.**, Caruso, M. C., & Condelli, N. (2018). Focus on gluten free biscuits: ingredients and issues. *Trends in Food Science & Technology*, 81,203-212. DOI: 10.1016/j.tifs.2018.09.006.
- 32. **Tolve, R.**, Condelli, N., Caruso, M. C., Barletta, D., Favati, F., & Galgano, F. (2018). Fortification of dark chocolate with microencapsulated phytosterols: chemical and sensory evaluation. *Food & Function*, 9(2), 1265-1273. DOI: 10.1039/c7fo01822c.
- 33. **Tolve, R.***, Condelli, N., Can, A., & Tchuenbou-Magaia, F. L. (2018). Development and characterization of phytosterol-enriched oil microcapsules for foodstuff application. *Food and Bioprocess Technology*, 11(1), 152-163. DOI: 0.1007/s11947-017-1990-4.
- 34. Caruso, M. C., Galgano, F., Colangelo, M. A., Condelli, N., Scarpa, T., **Tolve, R.**, & Favati, F. (2017). Evaluation of the oxidative stability of bakery products by OXITEST method and sensory analysis. *European Food Research and Technology*, 243(7), 1183-1191. DOI: 10.1007/s00217-016-2831-9.
- 35. Galgano, F., **Tolve, R.**, Colangelo, M. A., Scarpa, T., & Caruso, M. C. (2016). Conventional and organic foods: A comparison focused on animal products. *Cogent Food & Agriculture*, 2(1), 1142818. DOI: 10.1080/23311932.2016.1142818.
- 36. **Tolve, R.**, Galgano, F., Caruso, M. C., Tchuenbou-Magaia, F. L., Condelli, N., Favati, F., & Zhang, Z. (2016). Encapsulation of health-promoting ingredients: applications in foodstuffs. *International Journal of Food Sciences and Nutrition*, 67(8), 888-918. DOI: 10.1080/09637486.2016.1205552.
- 37. Caruso, M. C., Galgano, F., **Tolve, R.**, Pecora, M., Tedesco, I., Favati, F., & Condelli, N. (2016). Nutraceutical properties of wild berry fruits from Southern Italy. *Journal of Berry Research*, 6(3), 321-332. DOI: 10.3233/JBR-160140.
- 38. Caruso, M. C., Galgano, F., Pecora, M., **Tolve, R.**, Verrastro, M., & Favati, F. (2015). Improvement of analytical methods for the determination of polyphenolic bioactive compounds

in berry fruits. *Journal of Chemistry*, 2015. DOI: 10.1155/2015/384051.

* Corresponding Author

Book Chapters

Di Cairano, M., Tolve, R., Cela, N., Sportiello, L., Scarpa, T., & Galgano, F. (2022). Functional cereal-based bakery products, breakfast cereals, and pasta products. In *Functional Cereals and Cereal Foods: Properties, Functionality and Applications* (pp. 215-249). Cham: Springer International Publishing.

Participation in Conferences and Symposia

Tolve, R. (2023). Green extraction of phenolic compounds from red radicchio of Treviso Precoce I.G.P. (*Cichorium intybus* L. var. *Silvestre*) by-products using natural deep eutectic solvents. 9th International Conference on Food Chemistry & Technology, 27-29 November 2023, Paris, France.

Tolve, R. (2022). Fortification of wheat bread with olive oil by-product: nutritional, technological, antioxidant, and sensory properties. 4th Euro Global Conference on Food Science & Technology, 11-13 November 2022, Rome, Italy.

Condelli, N., Galgano, F., **Tolve, R.**, & Caruso, M.C. (2018). Enhancement of nutraceutical properties of dark chocolate by enrichment with microencapsulated phytosterols. Innovations in Food Science and Human Nutrition, 13-15 September 2018, Rome, Italy.

Tolve, R., Condelli, N., Galgano, F., Di Cairano, M., Favati, F., & Caruso, M.C. (2018). Functional dark chocolate with microencapsulated phytosterols: effect of phytosterols concentration and health claim information on consumers liking. Eurosense 2018, 2-5 September 2018, Verona, Italy.

Tolve, R. (2017). Development and optimization of phytosterols microencapsulation for the formulation of chocolate-based functional foods. Proceedings of XXII Workshop on the Developments in the Italian PhD Research on Food Science Technology and Biotechnology, 20-22 September 2017, Bolzano, Italy.

Tolve, R. (2016). Production and characterization of microencapsulated phytosterols as functional food ingredients. Proceedings of XXI Workshop on the Developments in the Italian PhD Research on Food Science Technology and Biotechnology, 14-16 September 2016, Portici, Italy.

Galgano, F., & **Tolve, R. (2016).** Microencapsulation for food application: focus on phytosterols as functional ingredients. Oral communication at the 4th International Food Safety, Quality, & Policy, 5-8 December 2016, Dubai, United Arab Emirates.

Tolve, R. (2015). Microencapsulation of phytosterols in food matrices. Proceedings of XX Workshop on the Developments in the Italian PhD Research on Food Science Technology and Biotechnology, 23-25 September 2015, Perugia, Italy.

Awards and Recognitions for Scientific Activity

In 2017, I was honored with the “What for” award, which was promoted by Federalimentare (the Italian Federation of the Food Industry) in collaboration with the National Network of PhD Programs in Food Science, Technology, and Biotechnology. This recognition was awarded for my PhD project, titled “Development and Optimization of Phytosterols Microencapsulation for the Formulation of Chocolate-Based Functional Foods.” The award highlighted the high scientific quality of my research

and its practical industrial applications during the XXII National Workshop on "Developments in Italian PhD Research on Food Science, Technology, and Biotechnology," held in Bolzano on September 22, 2017.

Technology Transfer

In 2020, I co-founded NutriBioFoods s.r.l., an academic spin-off of the University of Basilicata, alongside several partners. Our company provides scientific consulting and research and development services in food technologies, focusing on the prototyping of functional foods and innovative packaging solutions. We utilize bioactive compounds derived from agroforestry and food industry waste, as well as microbial metabolism, to drive our initiatives.

Verona, October 8, 2024

Roberta Tolve

A handwritten signature in black ink that reads "Roberta Tolve". The signature is fluid and cursive, with "Roberta" on the top line and "Tolve" on the bottom line.