

## Curriculum Vitae of Paola Tosi

### Present appointment:

Senior Research Fellow (Grade 7)

Nature of appointment: full-time R.

[ORCID](#) | [Google Scholar](#) |

### Previous appointments:

2010 - 2013: Senior Research Scientist, Rothamsted Research

2005 - 2010: Postdoctoral Research Scientist, Rothamsted Research .

2001 - 2005: Postdoctoral Research Scientist at the Institute of Arable Crop Research - Long Ashton Research Station

### Education and qualifications obtained:

Fellow of the Higher Education Academy (Academic Practice Program accreditation) - 2018

PhD in Agriculture (University of Bristol) - 2002

5 years Laurea degree (University of Tuscia, Viterbo) – 1996

### Research:

#### Research Articles (in refereed journals)

Google Scholar H-index 20

- González-Thuillier, I., Pellny, T. K., **Tosi, P.**, Mitchell a, R. A. C., Haslam, R. and Shewry, P. R. (2021) Accumulation and deposition of triacylglycerols in the starchy endosperm of wheat grain. *Journal of Cereal Science*, 98. 103167. ISSN 0733-5210  
doi: <https://doi.org/10.1016/j.jcs.2021.103167>
- Lovegrove, A., Wood, A. J., Hassall, K. L., Howes, L., Poole, M., **Tosi, P.** and Shewry, P. (2020) The contribution of fibre components to water absorption of wheat grown in the UK. *Cereal Chemistry*, 97 (5). pp. 940-948. ISSN 0009-0352  
doi: <https://doi.org/10.1002/cche.10316>
- Kino, R. I., Pellny, T. K., Mitchell, R. A. C., Gonzalez-Uriarte, A. and **Tosi, P.** (2020) High post-anthesis temperature effects on 3 bread wheat (*Triticum aestivum* L.) grain 4 transcriptome during early grain-filling. *BMC Plant Biology*, 20. 170. ISSN 1471-2229  
doi: <https://doi.org/10.1186/s12870-020-02375-7>
- Warsame, A. O. , Michael, N., O'Sullivan, D. M. and **Tosi, P.** (2020) Identification and quantification of major faba bean seed proteins. *Journal of Agricultural and Food Chemistry*, 68 (32). pp. 8535-8544. ISSN 1520-5118  
doi: <https://doi.org/10.1021/acs.jafc.0c02927>

## *Curriculum Vitae of Paola Tosi*

- Croall, I. D., Aziz, I., Trott, N., **Tosi, P.**, Hoggard, N. and Sanders, D. S. (2019) Gluten does not induce gastrointestinal symptoms in healthy volunteers; a double blind randomised placebo trial. *Gastroenterology*, 57 (3). pp. 881-883. ISSN 0016-5085 doi: <https://doi.org/10.1053/j.gastro.2019.05.015>
- Savill, G., Michalski, A., Powers, S. J., Wan, Y., **Tosi, P.**, Buchner, P. and Hawkesford, M. J. (2018) Temperature and nitrogen supply interact to determine protein distribution gradients in the wheat grain endosperm. *Journal of Experimental Botany*, 69 (12). pp. 3117-3126. ISSN 0022-0957 doi: <https://doi.org/10.1093/jxb/ery127>
- Salt, L. J., Gonzalez-Thuillier, I., Chope, G., Penson, S., **Tosi, P.**, Haslam, R. P., Skeggs, P. K., Shewry, P. R. and Wilde, P. J. (2018) Intrinsic wheat lipid composition effects the interfacial and foaming properties of dough liquor. *Food Hydrocolloids*, 75. pp. 211-222. ISSN 0268-005X doi: <https://doi.org/10.1016/j.foodhyd.2017.08.020>
- Rej, A., Kurien, M., **Tosi, P.**, Trott, N. and Sanders, D. (2018) The role of a gluten free diet in 'lifestylers'? The first double blind randomised study. In: British Society of Gastroenterology, 4-7 June 2018, Liverpool.
- Wilkinson, M. D., **Tosi, P.**, Lovegrove, A., Corol, D. I., Ward, J. L., Palmer, R., Powers, S., Passmore, D., Webster, G., Marcus, S. E., Knox, J. P. and Shewry, P. R. (2017) The Gsp-1 genes encode the 1 wheat arabinogalactan peptide. *Journal of Cereal Science*, 74. pp. 155-164. ISSN 0733-5210 doi: <https://doi.org/10.1016/j.jcs.2017.02.006>
- Moore, K. L., **Tosi, P.**, Palmer, R., Hawkesford, M. J., Grovenor, C. R. M. and Shewry, P. R. (2016) The dynamics of protein body formation in developing wheat grain. *Plant Biotechnology Journal*, 14 (9). PBI-00553-2015.R1. ISSN 1467-7652 doi: <https://doi.org/10.1111/pbi.12549>
- Koga, S., Bocker, U., Moldestad, A., **Tosi, P.**, Shewry, P., Mosleth, E. and Uhlen, A. K. (2016) Influence of temperature during grain filling on gluten viscoelastic properties and gluten protein composition. *Journal of the Science of Food and Agriculture*, 96 (1). pp. 122-130. ISSN 0022-5142 doi: <https://doi.org/10.1002/jsfa.7068>
- Gonzalez-Thuillier, I., Salt, L., Chope, G., Penson, S., Skeggs, P., **Tosi, P.**, Powers, S. J., Ward, J. L., Wilde, P., Shewry, P. R. and Haslam, R. P. (2015) Distribution of lipids in the grain of wheat (cv Hereward) determined by lipidomic analysis of milling and pearling fractions. *Journal of Agricultural and Food Chemistry*, 63 (49). pp. 10705-10716. ISSN 0021-8561 doi: <https://doi.org/10.1021/acs.jafc.5b05289>

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- Koga, S., Böcker, U., Moldestad, A., **Tosi, P.**, Shewry, P. R., Mosleth, E. F. and Uhlen, A. K. (2015) Influence of temperature on the composition and polymerization of gluten proteins during grain filling in spring wheat (*Triticum aestivum* L.). *Journal of Cereal Science*, 65. pp. 1-8. ISSN 0733-5210 doi: <https://doi.org/10.1016/j.jcs.2015.05.012>
- Palmer, R., Cornault, V., Marcus, S. E., Knox, J. P., Shewry, P. R. and **Tosi, P.** (2015) Comparative in situ analyses of cell wall matrix polysaccharide dynamics in developing rice and wheat grain. *Planta*, 241 (3). pp. 669-685. ISSN 0032-0935 doi: <https://doi.org/10.1007/s00425-014-2201-4>
- Oszvald, M., Tamas, L., Shewry, P. R. and **Tosi, P.** (2014) The trafficking pathway of a wheat storage protein in transgenic rice endosperm. *Annals of Botany*, 113 (5). pp. 807-815. ISSN 0305-7364 doi: <https://doi.org/10.1093/aob/mcu008>
- Lovegrove, A., Wilkinson, M. D., Freeman, J., Pellny, T. K., **Tosi, P.**, Saulnier, L., Shewry, P. R. and Mitchell, R. A. C. (2013) RNA interference suppression of genes in glycosyl transferase families 43 and 47 in wheat starchy endosperm causes large decreases in arabinoxylan content. *Plant Physiology*, 163 (1). pp. 95-107. ISSN 0032-0889 doi: <https://doi.org/10.1104/pp.113.222653>
- He, J., Penson, S., Powers, S. J., Hawes, C., Shewry, P. R. and **Tosi, P.** (2013) Spatial patterns of gluten protein and polymer distribution in wheat grain. *Journal of Agricultural and Food Chemistry*, 61 (26). pp. 6207-6215. ISSN 1520-5118 doi: <https://doi.org/10.1021/jf401623d>
- Pellny, T. K., Lovegrove, A., Freeman, J., **Tosi, P.**, Love, C. G., Knox, J. P., Shewry, P. R. and Mitchell, R. A. C. (2012) Cell walls of developing wheat starchy endosperm: comparison of composition and RNA-Seq transcriptome. *Plant Physiology*, 158 (2). pp. 612-627. ISSN 0032-0889 doi: <https://doi.org/10.1104/pp.111.189191>
- Gil-Humanes, J., Pistón, F., Shewry, P. R., **Tosi, P.** and Barro, F. (2011) Suppression of gliadins results in altered protein body morphology in wheat. *Journal of Experimental Botany*, 62 (12). pp. 4203-4213. ISSN 0022-0957 doi: <https://doi.org/10.1093/jxb/err119>
- **Tosi, P.**, Gritsch, C. S., He, J. and Shewry, P. R. (2011) Distribution of gluten proteins in bread wheat (*Triticum aestivum*) grain. *Annals of botany*, 108 (1). pp. 23-35. ISSN 1095-8290 doi: <https://doi.org/10.1093/aob/mcr098>
- **Tosi, P.**, Parker, M., Gritsch, C. S., Carzaniga, R., Martin, B. and Shewry, P. R. (2009) Trafficking of storage proteins in developing grain of wheat. *Journal of*

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Experimental Botany, 60 (3). pp. 979-991. ISSN 0022-0957  
doi: <https://doi.org/10.1093/jxb/ern346>

- Wiley, P. R., [Tosi, P.](#), Evrard, A., Lovegrove, A., Jones, H. D. and Shewry, P. R. (2007) Promoter analysis and immunolocalisation show that puroindoline genes are exclusively expressed in starchy endosperm cells of wheat grain. *Plant molecular biology*, 64 (1-2). pp. 125-136. ISSN 0167-4412 doi: <https://doi.org/10.1007/s11103-007-9139-x>
- [Tosi, P.](#), D'Ovidio, R., Napier, J. A., Bekes, F. and [Shewry, P. R.](#) (2004) Expression of epitope-tagged LMW glutenin subunits in the starchy endosperm of transgenic wheat and their incorporation into glutenin polymers. *Theoretical and Applied Genetics*, 108 (3). pp. 468-476. ISSN 1432-2242 doi: <https://doi.org/10.1007/s00122-003-1459-x>
- **O'Sullivan D, Tosi P**, Creusot F, Cooke B M, Phan T, Dron M, Langin T.(1998). Variation in genome organization of the plant pathogenic fungus *Colletotrichum lindemuthianum* *Current Genetics*, 4: 291-298.

### Reviews articles

- Shewry PR, Wan Y, Hawkesford MJ and **Tosi P** (2019). Spatial distribution of functional components in the starchy endosperm of wheat grains. *Journal of Cereal Science*. 91:102869.
- Warsame, A. O., O'Sullivan, D. M. and [Tosi, P.](#) (2018) Seed storage proteins of faba bean (*Vicia faba* L): current status and prospects for genetic improvement. *Journal of Agricultural and Food Chemistry*, 66 (48). pp. 12617-12626. ISSN 0021-8561 doi: <https://doi.org/10.1021/acs.jafc.8b04992>
- [Tosi, P.](#), He, J., Lovegrove, A., Gonzáles-Thuillier, I., Penson, S. and Shewry, P. R. (2018) Gradients in compositions in the starchy endosperm of wheat have implications for milling and processing. *Trends in Food Science & Technology*, 82. pp. 1-7. ISSN 0924-2244 doi: <https://doi.org/10.1016/j.tifs.2018.09.027>
- Sofi, F., Dinu, M., Pagliai, G., Cei, L., Sacchi, G., Benedettelli, S., Stefani, G., Gagliardi, E., [Tosi, P.](#), Bocci, R., Bussi, B., de Santis, G., Rodriguez Y Hurtado, I., de Kochko, P., Riviere, P., Carrascosa-García, M. and Martínez, I. (2018) Health and nutrition studies related to cereal biodiversity: a participatory multi-actor literature review approach. *Nutrients*, 10 (9). 1207. ISSN 2072-6643 doi: <https://doi.org/10.3390/nu10091207>

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- Moore KL, **Tosi P**, Zao F, Grovenor CRM, Shewry PR, Hawkesford M. (2014) Understanding Elemental Uptake in Plants Using High Resolution SIMS and Complementary Techniques. *Microscopy and Microanalysis* 20(S3):1316-1317
- **Tosi P** (2012) Trafficking and deposition of prolamins in wheat. *Journal of Cereal Science*. 56: 81-90.
- Shewry PR, Mitchell RA, **Tosi P**, Wan Y, Underwood C, Lovegrove A, Freeman J, Toole GA, Mills ENC, Ward JL (2012) An integrated study of grain development of wheat (cv. Hereward) *Journal of Cereal Science*, 56, 21-30

### Book Chapters

- **Tosi, P.**, Hidalgo, A. and Lullien-Pellerin, V. (2020) The impact of processing on potentially beneficial wheat grain components for human health. In: Igresias, G., Ikeda, T. M. and Guzmán, C. (eds.) *Wheat Quality for Improving Processing and Human Health*. Springer, pp. 387-420. ISBN 9783030341626 doi: [https://doi.org/10.1007/978-3-030-34163-3\\_17](https://doi.org/10.1007/978-3-030-34163-3_17)
- **Tosi P**, D'Ovidio R, Bekes F, Napier J.A and Shewry P.R (2004). Transgenic Expression of Epitope-Tagged LMW Glutenin Subunits in Durum Wheat: Effect on Polymer Size Distribution and Dough Mixing Properties. In **The gluten proteins**. Pp 22-25. Lafiandra D Masci S Dovidio R Eds
- Shewry PR, H. Jones, Pastori G, Rooke L, Steele S, He G, **Tosi P**, D'Ovidio R, Békés F, Darlington H, Napier J, Fido R, Tatham A. S., Barcelo P. and Lazzeri P (2000). Improvement of wheat processing quality by genetic engineering In *Gluten* pp 73-76 Shewry Pr and Tatham Eds .
- **Tosi P**, Napier JA, D'Ovidio R., Jones HD and Shewry PR (2000). Modification of the LMW glutenin subunit composition of durum wheat by microprojectile-mediated transformation. In *Gluten* (2000). pp 93 – 96 Shewry PR and Tatham A Eds
- D'Ovidio R, Masci S, Mattei C, **Tosi P**, Lafiandra D and Porceddu E (2000). Characterization of the LMW-GS gene family in durum wheat. In: *Gluten 2000* pp113 - 116 Shewry PR and Tatham AS Eds

## Curriculum Vitae of Paola Tosi

### Research Grants Won:

<b>Funder – Scheme</b>	<b>Grant Title</b>	<b>Duration</b>	<b>Associated Research Income (UoR)</b>	<b>Investigators –</b>
CERES	Upcycling of distilled grain	2021 (9months)	£20K	<b>P Tosi (PII)</b> S Grasso Co-I
Cargill	Microscopy investigation of starch-gluten interface in mature wheat grain.	2020-2022	£ 240k	<b>P Tosi (PI)</b> , J Rodriguez Garcia (co-I)
BBSRC-CTP Mondelez CASE	Understanding protein impact on soft wheat flour functionality. PHD studentship (BB/T508263/1)	2020-2024	£100k	<b>P Tosi (PI)</b>
AHDB	Student Bursary (H5416500)	2018	£3k	<b>P Tosi (PI)</b>
AHDB	Defining the basis for variation in water absorption of UK wheat flours (H5406000)	2016-2019	£80k	<b>P Tosi (col, UoR lead)</b> <sup>1</sup> PR Shewry (Rothamsted, PI)
EIT-Food	Circular Food Generator Track (H5422200)	2017-2018	£20k	<b>P Tosi (Col, UoR Lead)</b> <sup>2</sup> , Veerle Carlier , (Colruyt, PI)
EIT-Food	Constituent sensing of small grains (H5450800)	2018-2019	£220k	<b>P Tosi (Co I)</b> (UoR) Thomas Engel (John Deere PI)
EIT-Food	Wheat-Qual (H5450900)	2017-2019	£253k	<b>P Tosi (Co-I)</b> John Hammond (UoR lead) Gruppo AN (PI)
H2020	Cerere-CEreal Renaissance in Rural Europe	2016-2019	€ 287k	<b>P Tosi (Co-I)</b> Giuseppe Nocella PI (UoR lead).
BBSRC – CIRC (Crop Improvement) Research Club)	The role of lipids in determining gas bubble retention in wheat dough	2013-2016	£600k	PR Shewry (Rothamsted - PI), <b>P Tosi (RRes Co-I)</b>

## *Curriculum Vitae of Paola Tosi*

### **PhD Supervision**

5 out of 5 supervised to completion within 4 years (3 as first supervisor), 7 current students supervised (3 as first supervisor)

### **Teaching and Learning**

<b>Undergraduate teaching</b>	<b>Number of Credits</b>	<b>My Role</b>
<b>AP2A66</b> (Crop Agronomy)	20	Convenor
<b>AP3A47</b> Cereal management and Marketing	10	Convenor
<b>AP1A12</b> Final Dissertation	10	Contributor

### **Measures of Esteem:**

Associated Editor of Journal of the Science of Food and Agricultural Science since 2016.

External examiner for PhD thesis

Grant reviews for BBSRC – on average, 2-3 per year.

Invitation to international meetings/workshop as key-note speaker:

- Xth International Gluten Workshop, 2009, Clermont Ferrand, France.
- XIth International Gluten Workshop, 2012, Beijing, China
- 2014 AACC International Annual meeting, Providence, Rhode Island, USA, within the session dedicated to “Emerging genetic methods in cereal grain quality improvement”;
- XXVII Technical Seminar of Spanish Association of Technician Cerealists in 2016 in Madrid, with a talk on “FODMAPS in cereal products”
- Rank -Prize Mini-Symposium on The Role of Wheat in Diet, Health and Disease, 24th to 27th April 2017.

Organization of scientific meetings: I have organised and co-chaired Session 7 (Quality and Nutrition) of Monogram 2019. From 2020, I am a member of the Monogram Steering Committee.