

## Executive Summary

Anton has 7 years of experience in field, laboratory experiments and data analysis, international educational background in Agronomy and Biotechnology. He worked with MAS selection in tomato breeding and consulting in crop protection. Currently as a PhD student at Scuola Superiore Sant'Anna he is focused on the research in plant metabolomics, postharvest fruit physiology and genomics.

## Experience

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| 01/10/2018 – Present    | <b>Ph.D. in Agrobiosciences.</b> Sant'Anna School of Advanced Studies, Pisa (Italy).<br><u>Project:</u> Selenium enrichment of tomato plants: effects on fruit quality, ripening physiology and postharvest behavior. Expected date of dissertation defense: Spring 2022. |
| 01/08/2021 – Present    | <b>Visiting researcher (Erasmus+).</b> Laboratory of Genomics and Biotechnology of Fruit, INP-ENSA, Toulouse (France). Biological Big Data analysis. Financially supported by the PhD Programme and an Erasmus grant. Expected duration of the visit: 4 months.           |
| 10/07/2021 – 17/07/2021 | <b>Visiting researcher.</b> University of Bari. Pathological trial on selenium enriched tomato fruit.                                                                                                                                                                     |
| 05/02/2018 – 30/08/2018 | <b>Laboratory assistant.</b> Laboratory of Agrobiotechnology, SINTOL Company, Moscow. Development and testing of molecular markers.                                                                                                                                       |
| 01/06/2015 – 30/09/2015 | <b>Trainee.</b> All-Russian Scientific Research Institution of Horticulture, Moscow Region. Phenotyping, basic metabolomic analysis.                                                                                                                                      |
| 05/05/2014 – 30/06/2014 | <b>Sales manager.</b> JSC August Inc., Moscow. Consulting, sales reporting in crop protection.                                                                                                                                                                            |

## Education

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|-------------------------|------------------------------------------------------------------------------------------------------------------------------|
| 01/09/2016 – 30/08/2018 | <b>MSc in Agronomy</b><br>Russian State Agrarian University - Moscow Timiryazev Agricultural Academy, Moscow                 |
| 01/02/2017 – 31/01/2018 | <b>Agricultural Biotechnology exchange program (Erasmus+)</b> Szent István University, Gödöllő (Hungary)                     |
| 01/09/2013 – 07/07/2016 | <b>Qualification of interpreter</b> (English <=> Russian)<br>Linguistic Educational Center of RSAU-MTAA, Moscow              |
| 01/09/2012 – 31/08/2016 | <b>BCs degree in Agronomy</b><br>Russian State Agrarian University – Moscow Timiryazev Agricultural Academy, Moscow (Russia) |

## Skills

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| Plant physiology | Quantitative observation of fruit ripening: ethylene and CO <sub>2</sub> respiration measurement with Gas Chromatography (GC). Color evolution measurement and representation: CIELAB Color Space and Hue angle (colorimetry). Evaluation photosynthetic activity and respiration: fluorimetry, gas analysis (CIRAS-2). Qualitative analysis of fruit: titratable acidity, Soluble Solid Content and taste index.                                                                                                |
| Metabolomics     | Assessment of biochemical composition: Volatile organic compounds analysis (VOCs) using gas chromatography mass spectrometry (GCMS), library of compounds and method development, preparing and analyzing samples, quality control and GCMS chromatogram quantification. Carotenoids and polyphenols assays using High Performance Liquid Chromatography (HPLC); mineral composition determination: Atomic Absorption (AA) Spectrometry; Near-infrared spectroscopy; basics of Nuclear Magnetic Resonance (NMR). |
| Genomics         | Nucleic acids extraction and quantification, primer design and validation, PCR optimization, gel and capillary electrophoresis, basics of Fragment Analysis.                                                                                                                                                                                                                                                                                                                                                     |
| Transcriptomics  | RT-PCR, gene expression analysis (qPCR). RNA-Seq library preparation (NovaSeq 6000 kit by Illumina), currently studying analysis of biological Big Data obtained from NGS and Differentially Expressed genes analysis.                                                                                                                                                                                                                                                                                           |
| Technical        | Experimental design; fruit sample collection, storing and preparation for compositional analyses. Hydroponic system maintenance, phenotyping, statistical analysis and data visualization, research paper writing and editing, presenting.                                                                                                                                                                                                                                                                       |
| Software         | R Studio, Prism Pad; NIST, Amdis; currently studying UNIX.                                                                                                                                                                                                                                                                                                                                                                                                                                                       |
| Languages        | Russian: mother tongue; English: fluent (C1); Italian: independent (B2), Hungarian: basic (A1).                                                                                                                                                                                                                                                                                                                                                                                                                  |

## Personal interests

Active in non-profit initiatives in the fields of public health.

## Publications

Meucci, A.; Shiriaev, A.; Rosellini, I.; Malorgio, F.; Pezzarossa, B. Se-Enrichment Pattern, Composition, and Aroma Profile of Ripe Tomatoes after Sodium Selenate Foliar Spraying Performed at Different Plant Developmental Stages. *Plants* **2021**, *10*, 1050. <https://doi.org/10.3390/plants10061050>

Ignatova SI, Babak OG, Solovyov AA, Shiriaev AV, Bagirova SF. Use of molecular markers to study pigment and antioxidant accumulation in tomato leaves and fruits. *XIX EUCARPIA Meeting of the Tomato Working Group*, Naples, Italy, **2018**.

Shiriaev A. Russia's WTO accession: advantages and disadvantages. Agricultural aspects. Economic development problems of Russian agro-industrial complex, Moscow 2015, p 153 (in Russian).

Shiriaev A. The impact of Russia's accession to the WTO on the development of agrarian policy. Innovative development of socio-economic systems, Ulianovsk, Russia 2015, p 442-447, ISBN 978-5-9795-1388-1 (in Russian).

## Conferences

XIII Giornate Scientifiche SOI «I traguardi di Agenda 2030 per l'ortoflorofrutticoltura italiana». Catania, Italy 2021. Project: Selenium enrichment of tomato plants with nanoparticles: improved fruit quality, physiological performance, and increased nutraceutical value.

69th International student scientific-practical conference dedicated to the 200th anniversary of N.I. Zheleznov, Moscow 2016. Project: Marking system developing for genes, responsible for the lycopene synthesis in *Solanum Lycopersicum* fruits.

68th International student scientific-practical conference dedicated to the 150th anniversary of Russian State Agrarian University, Moscow 2015. Project: Russia's WTO accession: advantages and disadvantages. Agricultural aspects.

67th International student scientific-practical conference dedicated to the 120th anniversary of Academician V.S. Nemchinov, Moscow 2014. Project: Improvement technologies of agricultural machinery recycling.

## Courses

Next Generation Sequencing School by Thermo Fisher Scientific, Moscow 2016.

International Summer School «Biotechnologies in Agriculture, Agrobiotech», RSAU-MTAA, Moscow 2015.