



Mycotwin

Worldwide Mycotoxin Management via
Co-Creation of Innovative Strategies

Newsletter 3

April 2023



WELCOME to the third release of MycoTWIN updates!

We are pleased to announce you the completion of the second year of the project and MycoTWIN activities continue at full speed.

We hope you enjoy reading the newsletter and invite you to check our website regularly, follow us on social media or contact us directly for more information.

The MycoTWIN project continues to support the entire value chain from planning of the cropping system to cultivation of crops, harvest, storage, transport, processing and consuming, all of which can be affected by mycotoxins.

Rapid and effective communication with relevant parties/stakeholders

Increasing knowledge, experience, and skills of research staff



Effective dissemination and exploitation of MycoTWIN outcomes

Cooperation and formulation scientific strategy among the project partners for further researches



The 13th conference of the World Mycotoxin Forum and 1st Round Table Meeting was held in Parma, Italy

16 May-18 May 2022

The conference brought together a holistic program covering the latest topics in mycotoxin management and reduction, analysis and toxicology. More recent developments in this area were discussed in light of global challenges such as climate change, food (insecurity) and circular economy. As the MycoTWIN consortium, the conference was attended and the project's poster was presented by Dr. Martina Loi from CNR-ISPA.



Under the leadership of CNR-ISPA, with the partnership of MycoTWIN-MYCOBOOST projects, the first roundtable meeting was held at the University of Parma on May 18, 2022 with many qualified participants who are experts in the subject. Prior to meeting, the participants were asked to complete a survey in order to identify any gaps and current practices regarding the risk assessment approaches and data management strategies for toxigenic fungi and mycotoxins. The roundtable meeting was held to discuss the topics, evaluate the survey results, and define strategies and priorities.

Short term on-site training 3 was held at the University of Valencia (UV)

16 May-29 July 2022

A short-term visit on the topic of "LC-MS/MS analysis of mycotoxins in nuts and dried fruits and risk assessment through the deterministic approach" was organized at the University of Valencia, Spain, between May 16 and July 29, 2022. The experts from UV shared their expertise and practical knowledge regarding the techniques applied to detect mycotoxins in nuts with Dr. Ilknur Demirtas, a young researcher from TUBITAK MycoTWIN team.



In her study at UV, raw organic and commercial nut samples namely walnut, almond, cashew nut, hazelnut, and pistachio were collected from local markets in Valencia. QuEChERS procedure and immunoaffinity columns were used for sample extraction and cleanup. Then, two analytical methods HPLC-FLD and LC-Q-TOF-MS were compared for the quantitative determination of aflatoxin B1 and Ochratoxin-A.

Whole period was very beneficial for the young researcher and she was able to improve her skills, knowledge, and awareness of multi-mycotoxin determination as a result of this advanced knowledge transfer on mycotoxin identification.

1st expert visit was held at TUBITAK

6-9 June 2022

The projects's 1st scheduled expert visit took place from on June 6-9, 2022 at TUBITAK, Turkey. Dr. Antonio Moretti and Dr. Martina Loi from CNR-ISPA, as well as Dr. Juan Manuel Quiles Beses and Victor D'Opazo Taberner from UV participated in the visit as experts and observed the facilities and research projects at TUBITAK.



During the visit, the experts shared their knowledge and latest updates in the area with the TUBITAK researchers through several presentations and the researchers had the chance to keep up to date with the latest developments. Dr. Hayrettin Özer and the project team provided general information regarding the TÜBİTAK Life Sciences Department, study topics, research groups, and R&D infrastructure.



Besides, the experts visited the Food Innovation Center, pilot plant, and laboratories in order to see the studies in place. In the end, the experts were requested to evaluate the institute's current situation and offer suggestions to improve the skills which were indeed very beneficial for the TUBITAK team.

The visit was very efficient as a whole and ended with discussion about future studies and possible further collaborations.

Short term on-site training 1 was held at the CNR-ISPA

20 June-29 July 2022

A short-term visit on "Pre- and post-harvest management for mycotoxins and toxigenic fungi minimization in dried fruits, nuts, cereals, and spices; Mycotoxin monitoring and toxigenic fungi identification" was held at CNR-ISPA, Bari-Italy, between 20 June and 29 July 2022. Experts from CNR-ISPA carried out joint studies to transfer their knowledge and experience to TUBITAK researchers Ceyda Pembeci Kodolbaş and Dr. N. Aslı Öncü.



In this context, molecular identification, determination of toxigenic potential, and phylogenetic analysis of molds isolated from pistachios of Turkish origin were carried out in order to reveal the risk of mycotoxins in nuts.



Short term on-site training 2 was held at the CNR-ISPA

27 June-29 July 2022

Short-term visits on "Development of reference materials for multi-mycotoxin analysis" and "Development of rapid test kits for multi-mycotoxin analysis" were held in CNR-ISPA, Bari-Italy, between 27 June and 29 July 2022. CNR-ISPA experts carried out joint study together with TUBITAK researchers on the prototype development of a rapid test kit based on biochip array technology and production of reference material for multi-mycotoxin analysis as model products.



TUBITAK researchers Dr. Hayrettin Özer and Dr. Aytunga Kibar improved their skills and know-how on multi-mycotoxin rapid test kits and reference materials through advanced knowledge sharing.



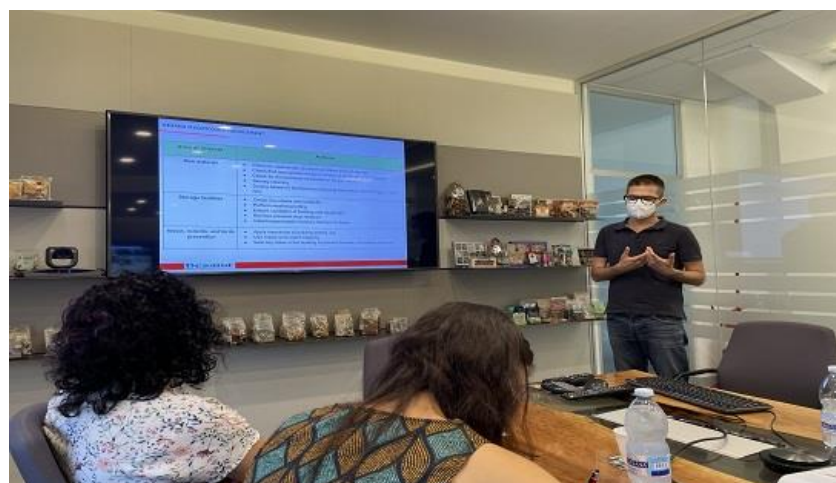
1st technical visit was held in Bari, Italy

5 July 2022

Within the scope of MycoTWIN project, the first technical visit was organized to Besana Company in Italy on 5/7/2022. Researchers from TUBITAK and CNR-ISPA participated in the visit. During the event, Vittoria Calgani from Besana, Dr. Antonio Logrieco from CNR-ISPA, and Dr. Hayrettin Özer from TUBITAK introduced their institutions and recent studies. Besides, Dr. Hayrettin Özer presented the MycoTWIN project to Besana experts and invited them to take part in the activities.



Following the presentations MycoTWIN partners visited the factory and were informed on all the machinery park and food products of Besana. At the end of the event, all participants discussed future studies and potential future collaborations.



Summer school 3 was held at UV

11-15 July 2022

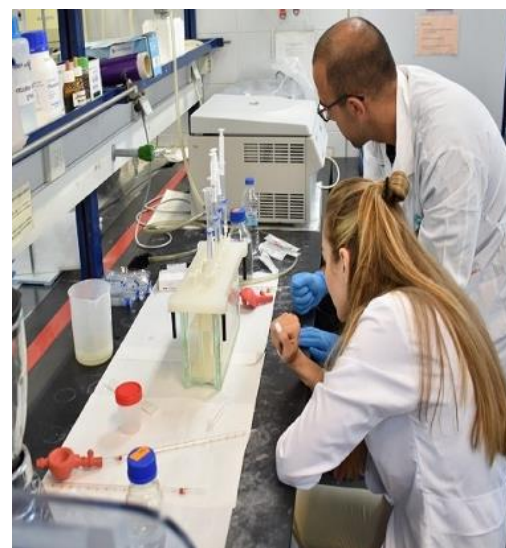
The third summer school on "LC-MS/MS multi-mycotoxins methods for the analysis of the nuts and dried fruits" took place between July 11 and July 15 at the University of Valencia (Spain). Participants from TUBITAK and CNR-ISPA, and also five young researchers chosen among Turkey's universities, R&D centers, and development agencies, involved in this summer school.



The summer school focused on transferring knowledge to young researchers on LC-MS/MS techniques and also new emerging techniques for mycotoxin analyses.



Participants learned more about extraction methods of mycotoxins from the nuts and dried products, LC-MS/MS working principal, and data analysis. They had the opportunity to enhance their knowledge of LC-MS/MS techniques for multi-mycotoxin analyses through this training.



Summer school 4 was held at UV

18-22 July 2022

University of Valencia (Spain) organized summer school 4 from July 18-22, 2022 with the subject of "GC-MS/MS multi-mycotoxins methods for the analysis of cereals and derivate products". Participants from TUBITAK and CNR-ISPA, and five young researchers chosen from among Turkish universities, R&D centers, and ministry development agencies involved in this summer school.



Young reserachers were trained gas chromatography techniques as well as new advanced techniques for mycotoxin analyses. Participants improved their knowledge on the GC-MS/MS operating principle, data analysis, and mycotoxing extraction methods from cereals and their derivate products. Young researchers had the opportunity to develop their skills through multi-mycotoxin analyses using GC-MS/MS technique with this training.

Summer school 1 was held at the CNR-ISPA

17-21 October 2022

Summer School 1 on “Rapid and official methods for mycotoxin detection and toxigenic fungi identification (morphological and molecular approaches) in wheat” was held at the CNR-ISPA (Italy) between 17 and 21 October 2022. Five young researchers selected from various universities, R&D research centers and ministries development agencies institutions in Turkey, as well as participants from TUBITAK and University of Valencia (UV), attended this summer school.



This summer school focused on transferring knowledge to young researchers on morphological and molecular analysis for mycotoxigenic fungi. Participants gained knowledge about the development potential of mold samples that were created in a lab setting and grew in a particular culture medium and also the molecular training on fungal identification through DNA extraction to real time PCR, LAMP assay.

Dr. Hayrettin Ozer, the project coordinator, was welcomed online on the last day. In his remarks, he emphasized the importance of taking an active role and especially the potential of transferring the knowledge to the participants during the training. He also thanked the project partners, and all experts for the excellent training that they provided.



Summer school 2 was held at the CNR-ISPA

17-21 October 2022

CNR-ISPA (Italy) hosted the second summer school on “Strategies for minimization of mycotoxins and toxigenic fungi in food chains” from October 17 to 21, 2022. Participants from TUBITAK, UV, and five young researchers selected from a variety of Turkish universities, R&D centers, and ministry development agencies participated in the event. The main objective of the summer school 2 was to train young researchers how to minimize mycotoxins and toxigenic fungi in food value chain.



Summer school 2 provided an overview of mycotoxin and fungi decontamination, gave detailed information about different approaches such as physical, chemical and biological strategies to decontaminate mycotoxin-contaminated commodities.



6th IMEKO FOOD Hybrid Conference was held in Dubrovnik, Croatia

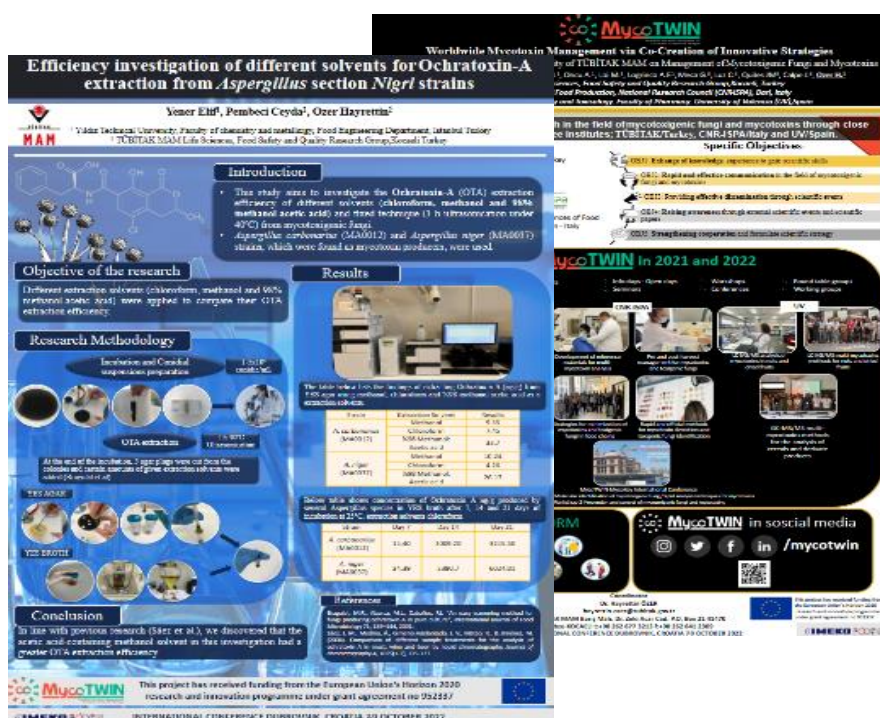
7-9 November 2022

The outputs of the short-term training on “LC-MS/MS analysis of mycotoxins in nuts and dried fruits and risk assessment through the deterministic approach” were presented at the 6th IMEKO FOOD Conference. In a presentation titled “Comparison of HPLC-FLD and LC-Q-TOF-MS methods for the quantitative determination of aflatoxin B1 and ochratoxin A in raw nuts collected from local



markets in Valencia”, Dr. İlknur Demirtaş shared the content, details and results of her work with the audience.

Elif Yener, a TUBITAK scholar, attended the conference as a young researcher with a poster presentation of the MycoTWIN project. The poster highlighted the project's goals and planned/completed activities, in addition to general project information.



She also discussed the results of the study conducted at the institute, "Investigation of the Effectiveness of Different Solvents for the Extraction of Ochratoxin-A from Aspergillus division Nigri strains". In general, the OTA-producing *Aspergillus carbonarius* (MA0012) and *Aspergillus niger* (MA0037) strains were selected in the investigation, and their effects on various solvents were examined.

FoodMetNet-MycoTWIN Joint Training Course and Seminar

22-23 November 2022

TUBITAK, together with INRIM (Italian National Institute of Metrology Research) and with support from all EMN (European Migration Network) members, has organized a joint EMN Safe and Sustainable Food Training Course on “Measurement reliability in mycotoxin analysis” and MycoTWIN seminar on “Rapid tests and advanced analysis techniques for mycotoxins” in TUBITAK UME (Turkey) at 22-23 November 2022.

The purpose of the training course was:

- ✓ to raise the awareness of the importance of metrological traceability and reliable measurements in mycotoxin analysis.
- ✓ to share knowledge and experience about metrological requirements among project partners and stakeholders in the field of mycotoxin
- ✓ to achieve communication with relevant stakeholders in the field of mycotoxin analysis



This training course and seminar have provided participants with an overview on mycotoxin analyses and outlined the metrological approach to establish reliability, comparability and traceability of analytical results. The activity included presentations by MycoTWIN experts and experienced NMI/DI representatives from the EMN's members and stakeholders. It was open to EFSA, EURLs and NRLs, the IUPAC, standardization bodies, and representatives of all other related institutes or laboratories. A total of 244 participants, 216 online and 28 face-to-face, attended the event.

3rd Info Day was held in Gaziantep, Turkey

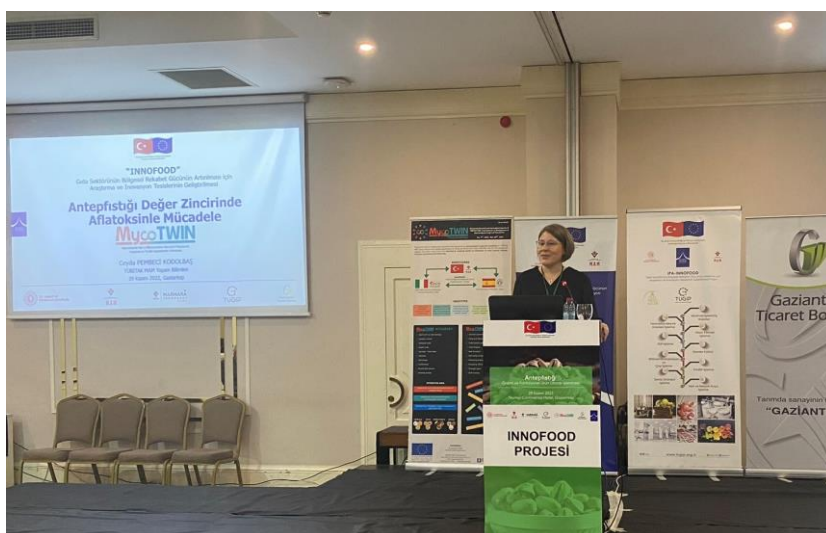
29 November 2022



In cooperation with Gaziantep Commodity Exchange (GTB), Turkey Food Innovation Platform (TÜGİP), and MycoTWIN, 'The Importance of Pistachio and Processing as a Functional Product Workshop' was held with the participation of the leading names of the sector. The experts in the field discussed 'Pistachio Production, Processing Industry Problems and Value-Added Products, New and Domestic Research Results, and Future Trends in Pistachio Production' at the workshop, which aims to shape the future of the pistachio industry together with industry stakeholders.

Ceyda Pembeci Kodolbaş, a researchers from TUBITAK MycoTWIN team, gave information about the MycoTWIN project and explained how to benefit from the project on a national scale. She also encouraged the participants to take an active part in the project.

During her talk, she discussed the strategies for management of aflatoxin in the pistachio value chain and underlined the the importance of all stakeholders working together for an effective management. Gaziantep's local administrators, academic staff, and sector employees participated in the event.



4th Info Day was held in İzmir, Turkey

9 December 2022



In cooperation with Aegean Dried Fruits and Products Exporters' Association and Turkish Food Innovation Platform (TÜGİP), the joint workshop on 'Dried Fruits Industry and Its Future in Turkey' and MycoTWIN Info Day was held in İzmir on 9 December 2022. During the workshop, the Turkish dried fruit industry has determined its R&D and innovation strategies in dried fruit, of which it is the world leader in production and export. Mycotoxin-related issues were discussed, and it was decided to plan future studies with all stakeholders.

As a researcher from TUBITAK MycoTWIN team, Ceyda Pembeci Kodolbaş gave an informative speech on 'MycoTWIN Project and Management of Mycotoxins in the Dried Fruits Value Chain'. She informed the audience of the objectives, latest activities, and future steps of the MycoTWIN project and encouraged them to take an active role in the Project and the Mycotoxin Platform of Turkey.



Summer School 7

18-24 June 2023

The summer school will be organized on 'Pre and post-harvest management for mycotoxins and toxigenic fungi minimization in Fusarium affected crops' by CNR-ISPA in Bari, Italy. The event is free of charge for five Turkish young researchers. MSc or PhD students from Turkey can apply to the event and applications will be made through the MycoTWIN website. The deadline for applications is April 14, 2022.

For more info and application requirements, please visit the project website, <https://www.mycotwin.eu/>



14th conference of the World Mycotoxin Forum

9-11 October 2023

We are happy to announce that the 14th conference of **The World Mycotoxin Forum[®]** – WMFmeetsBelgium – will take place in Antwerp, Belgium, 9-11 October 2023.

WMFmeetsBelgium will offer an excellent way to network, share ideas, and formulate recommendations and conclusions on how to close knowledge gaps, including:

- ✓ Presentations and discussions in plenary meetings and parallel sessions
- ✓ Poster sessions
- ✓ Young scientist sessions
- ✓ Company pitches, case studies, and industry updates covering a wide range of topics
- ✓ Workshops and demonstrations
- ✓ A concurrent instrument/manufacturers exhibition providing information on equipment, products, and services.

The conference chairs and the committee members are looking forward to meeting you.

The MycoTWIN communication channels are open, join us!

If you like to learn more on objectives and activities of MycoTWIN project, go to <https://mycotwin.eu/> and also subscribe to our newsletter.

MycoTWIN is also on Twitter, LinkedIn, Facebook and Instagram.

FOLLOW US!



On behalf of all the project partners, we extend a sincere 'Thank You' for your interest in MycoTWIN, and we look forward to hearing from you either comments or contributions to our activities or on your own efforts in mycotoxin related science and technology.

Best wishes,

Dr. Hayrettin Özer and the MycoTWIN Communication Team

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