



Delvana Mutarutwa

Born in Burundi

Master Degree in Food Science and Technology – Faculty of Bioscience and Technology for Food, Agriculture and Environment- University of Teramo- IT

Master t in Coffee Economics & Science - Ernesto Illy , Trieste (IT)



Paola Pittia

AGR/15 : Food Science and Technology

Research Field: Food quality properties; food processing



Jessica Freiherr

Fraunhofer IVV Munich (DE)
Sensory Analytics

Neuroscientific aspects of sensory perception



Luciano Navarini

Research & Scientific Coordinator
Illycaffè S.P.A., Trieste (IT)

Company mission: coffee roasting of high quality green Arabica coffee. The company is committed to R&D with the support of the internal «AromaLab»

Aroma volatile compounds of coffee: role in authenticity, traceability and well-being of consumers

- This project is aimed to evaluate the role of aroma volatile compounds in authenticity, traceability and well-being of consumers by:
 - the identification of the aromatic pattern characterizing coffee of different origin and /or production process as well as specific volatile compounds to be used for authenticity and / or traceability as well as quality of green and roasted coffee
 - The evaluation of the possible role that the aroma of coffee or of some odorous volatile compounds can have in vivo on the mental and psychophysical state of consumers.

- Industrial impact of the project
 - Identification of key aroma compounds to be used as markers of origin, quality and freshness to be used to implement a traceability system
 - Development of new methodologies and instrumental techniques to evaluate the coffee aroma pattern and the volatile aroma markers



Company role in PON RI project

UNITE



- Co-projecting: illycaffè has co-projected the research and training conducted during the PhD programme. The company is/has hosted the PhD student in the AromaLab and contributed with its structure and equipment, specialized personnel and its background in the field of coffee processing and quality.
- Training: illycaffè assisted the PhD student's training activities increasing his abilities on quality properties and aroma analysis by GC-MS techniques.
- Research: illycaffè and, in particular the AromaLab department have actively contributed to the research project by conducting joint experiments with UniTe as well as with the Fraunhofer IVV. This collaboration, has a result, allowed to produce several abstracts presented in national and international congresses and, by now, to publish two articles on peer-reviewed journals.
- Technological transfer: the company intends to apply the analytical and innovative instrumental methodologies developed by the PhD within the Quality Assurance plan and use the research data on coffee samples as baseline for a specific database. The company may be interested to adopt internally for QC purposes an e-nose developed in collaboration with UniTE.



Publications

- Mutarutwa D, Navarini L, Lonzarich V, Compagnone D, Pittia P. GC-MS aroma characterization of vegetable matrices: Focus on 3-alkyl-2-methoxypyrazines. J Mass Spectrometry 2018;1–11. <https://doi.org/10.1002/jms.4271>
- Mutarutwa D, Navarini L, Lonzarich V, Crisafulli P., Compagnone D, Pittia P.. Determination of 3-Alkyl-2-methoxypyrazines in Green Coffee: A Study To Unravel Their Role on Coffee Quality. J. Agric. Food Chem. Date:December 16, 2019, <https://doi.org/10.1021/acs.jafc.9b07476>



Scientific meeting

Oral communications:

- Mutarutwa, D.; Navarini, L.; Lonzarich, V.; Compagnone, D.; Pittia, P. (2017). GC-MS aroma characterization of vegetable matrices: focus on 3-Alkyl-2-Methoxypyrazines. 5th MS Food Day, Bologna, Italy, 2017, 11-13 October.
- Mutarutwa, M. (2019). Aroma volatile compounds of coffee: role in authenticity, traceability and well-being of consumers. In Proceedings of the 24nd Workshop on the Developments in the Italian PhD Research on Food Science and Technology. Florence (Italy), 2019, 11-13 September.

Posters:

- Mutarutwa, M. (2017). Aroma volatile compounds of coffee: role in authenticity, traceability and well-being of consumers. In Proceedings of the 22nd Workshop on the Developments in the Italian PhD Research on Food Science and Technology. Bozen (Italy), 2017, 20-22 September,.
- Lonzarich, V.; Mutarutwa, D.; Compagnone, D.; Pittia, P. ; Navarini, L. (2018). Is it still necessary to deepening the knowledge on alky-methoxypirazines? A study to unravel their role on coffee quality. The 27th ASIC Conference on coffee. Portland, Oregon, USA , 2018, 16-20 September.
- Mutarutwa, M. (2018). GC-MS aroma characterization of coffee and vegetable matrices: Focus on 3-alkyl-2-methoxypyrazines. In Proceedings of the 23nd Workshop on the Developments in the Italian PhD Research on Food Science and Technology. Cagliari (Italy), 2018,20-22 September.