

## I. Articles published in ISI-indexed journals

1. David, M., **Hategan, A. R.**, Dehelean, A., Puscas, R., Cristea, G., Belc, N., Mustatea, G., & Magdas, D. A. (2025). Elemental and isotopic profile of honey—insights related to the nature of the exploited plant and potential environmental influences. *Microchemical Journal*, 115965. <https://doi.org/10.1016/j.microc.2025.115965>
2. Magdas, T. M., Bodolea, C., Gherman, C., **Hategan, A. R.**, Magdas, D. A., David, M., Capras, R. D., & Filip, G. A. (2025). Neurotoxicity of Lanthanum Salts: A Narrative Review of Mechanistic Insights from Cellular and Animal Models. *Molecules*, 30(18), 3748. <https://doi.org/10.3390/molecules30183748>
3. **Hategan, A. R.**, Guyon, F., Gaillard, L., Magdas, D. A. (2025). Artificial Intelligence Applied to Honey <sup>13</sup>C NMR Data: A New Path for Honey Recognition. *Journal of Agricultural and Food Chemistry*, 73(30), 18932–18938. <https://doi.org/10.1021/acs.jafc.5c01503>
4. Magdas, D. A., **Hategan, A. R.**, David, M., Berghian-Grosan, C. (2025). The Journey of Artificial Intelligence in Food Authentication: From Label Attribute to Fraud Detection. *Foods*, 14(10), 1808. <https://doi.org/10.3390/foods14101808>
5. Nikolaou, F. G., **Hategan, A. R.**, Magdas, D. A., Dehelean, A., Colobatiu, L. M., Colobatiu, L. M., Ardelean Costin, A. S., Mihaie, M. (2025). Integrating Isotope Ratio Mass Spectrometry, Elemental Profiling and PCR for Comprehensive Food Authenticity Assessment of Dairy Products. *Bulletin of University of Agricultural Sciences and Veterinary Medicine Cluj-Napoca. Food Science and Technology*, 82(1), 161-171. <https://doi.org/10.15835/buasvmcn-fst:2025.0018>
6. Nikolaou, F. G., Colobatiu, L. M., Ciupescu, L. M., Tabaran, A., **Hategan, A. R.**, Mihaie, R., Tanasuica, R., Poenaru, M. M., Mihaie, M. (2025). Prevalence and Antimicrobial Resistance of *Listeria monocytogenes* Isolated from Dairy Products in Romania. *Antibiotics*, 14(5), 482. <https://doi.org/10.3390/antibiotics14050482>
7. **Hategan, A. R.**, Pirnau, A., Magdas, D. A. (2025) Applications of Machine Learning for Wine Recognition Based on <sup>1</sup>H-NMR Spectroscopy. *Beverages*, 11, 45. <https://doi.org/10.3390/beverages11020045>
8. Magdas, D. A., David, M., **Hategan, A. R.**, Filip, A., Baldea, I., Magdas, T. M. (2025). Rare earth elements: Between technological critical elements and emerging contaminants. *Journal of Agriculture and Food Research*, 21, 101818. <https://doi.org/10.1016/j.jafr.2025.101818>
9. Bocaneala, M., **Hategan, A. R.**, David, M., Dehelean, A., Cristea, G., Szücs-Balázs, J. Z., Rakosy-Tican, E., Magdas, D. A. (2025). Profiling the Spirulina Dietary Supplements Available on the Romanian Market. *Applied Sciences*, 15(5), 2658. <https://doi.org/10.3390/app15052658>
10. Molnár, C., **Hategan, A. R.**, Magdas, D. A. (2024). Testing the potential of Surface-Enhanced Raman Spectroscopy for varietal and growing system discrimination of frozen berry fruits. *Journal of Food Composition and Analysis*, 106898. <https://doi.org/10.1016/j.jfca.2024.106898>
11. **Hategan, A. R.**, David, M., Pirnau, A., Cozar, B., Cinta-Pinzaru, S., Guyon, F., Magdas, D. A. (2024). Fusing <sup>1</sup>H NMR and Raman experimental data for the improvement of wine recognition models. *Food Chemistry*, 458, 140245. <https://doi.org/10.1016/j.foodchem.2024.140245>
12. **Hategan, A. R.**, Dehelean, A., Puscas, R., Cristea, G., Belc, N., Mustatea, G., Magdas, D. A. (2024). The development of honey recognition models with broad applicability based on the association of isotope and elemental content with ANNs. *Food Chemistry*, 458, 140209. <https://doi.org/10.1016/j.foodchem.2024.140209>

13. Magdas, T. M., David, M., **Hategan, A. R.**, Filip, G. A., Magdas, D. A. (2024) Geographical Origin Authentication—A Mandatory Step in the Efficient Involvement of Honey in Medical Treatment. *Foods*, 13(4), 532. <https://doi.org/10.3390/foods13040532>
14. Covaciu, F. D., Berghian-Grosan, C., **Hategan, A. R.**, Magdas, D. A., Dehelean, A., Cristea, G. (2023). Machine Learning Approach to Comparing Fatty Acid Profiles of Common Food Products Sold on Romanian Market. *Foods*, 12(23), 4237. <https://doi.org/10.3390/foods12234237>
15. **Hategan, A. R.**, David, M., Berghian-Grosan, C., Magdas, D. A. (2023) Geographical and Varietal Origin Differentiation of Alcoholic Beverages through the Association between FT-Raman Spectroscopy and Advanced Data Processing Strategies, *Food Chemistry: X*, 100902, <https://doi.org/10.1016/j.fochx.2023.100902>
16. Cristea, G., Dehelean, A., Puscas, R., Covaciu, F.-D., **Hategan, A. R.**, Müller Molnár, C., Magdas, D. A. (2023) Characterization and Differentiation of Wild and Cultivated Berries Based on Isotopic and Elemental Profiles. *Applied Sciences*, 13(5), 2980. <https://doi.org/10.3390/app13052980>
17. Berghian-Grosan, C., **Hategan, A. R.**, David, M., Magdas, D. A. (2023). Untargeted metabolomic analysis of honey mixtures: discrimination opportunities based on ATR-FTIR data and machine learning algorithms. *Microchemical Journal*, 118, 108458. <https://doi.org/10.1016/j.microc.2023.108458>
18. Cristea, G., Dehelean, A., Puscas, R., **Hategan, A. R.**, Magdas, D. A. (2023). Isotopic and Elemental Fingerprint of Edible Egg Parts. The Health Risk Assessment Based on Potentially Toxic Elements Content. *Molecules*, 28(2), 503. <https://doi.org/10.3390/molecules28020503>
19. Pirnau, A., Feher, I., Sârbu, C., **Hategan, A. R.**, Guyon, F., Magdas, D. A. (2022). Application of Fuzzy algorithms in conjunction with <sup>1</sup>H-NMR spectroscopy for alcoholic beverages differentiation. *Journal of the Science of Food and Agriculture*. 103(4), 1727–1735. <https://doi.org/10.1002/jsfa.12402>
20. Dehelean, A., Cristea, G., Puscas, R., **Hategan, A. R.**, Magdas, D. A. (2022). Assigning the Geographical Origin of Meat and Animal Rearing System Using Isotopic and Elemental Fingerprints. *Applied Sciences*, 12(23), 12391. <https://doi.org/10.3390/app122312391>
21. **Hategan, A. R.**, Magdas, D. A., Puscas, R., Dehelean, A., Cristea, G., Simionescu, B. (2022). Machine Learning Algorithms in Corroboration with Isotope and Elemental Profile—An Efficient Tool for Honey Geographical Origin Assessment. *Applied Sciences*, 12(21), 10894. <https://doi.org/10.3390/app122110894>
22. Dehelean, A., Cristea, G., Feher, I., **Hategan, A. R.**, Magdas, D. A. (2022). Differentiation of Transylvanian fruit distillates using supervised statistical tools based on isotopic and elemental fingerprint. *Journal of the Science of Food and Agriculture*, 103(3), 1454-1463. <https://doi.org/10.1002/jsfa.12241>
23. David, M., **Hategan, A. R.**, Magdas, D. A., Berghian-Grosan, C., Simionescu, B. (2022). Botanical Origin Assessment of Honey Based on ATR-IR Spectroscopy: A Comparison between the Efficiency of Supervised Statistical Methods and Artificial Intelligence. *Applied Sciences*, 12(19), 9645. <https://doi.org/10.3390/app12199645>
24. David, M., **Hategan, A. R.**, Berghian-Grosan, C., Magdas, D. A. (2022). The Development of Honey Recognition Models Based on the Association between ATR-IR Spectroscopy and Advanced Statistical Tools. *International Journal of Molecular Sciences*, 23(17), 9977. <https://doi.org/10.3390/ijms23179977>

25. **Hategan, A. R.**, Guyon, F., Magdas, D. A. (2022). The improvement of honey recognition models built on <sup>1</sup>H-NMR fingerprint through a new proposed approach for feature selection. *Journal of Food Composition and Analysis*, 114, 104786. <https://doi.org/10.1016/j.jfca.2022.104786>
26. Dehelean, A., Magdas, D. A., Feher, I., Puscas, R. H., **Hategan, A. R.**, Mirel, V., Mirel, S., Crivii, C. (2022). Characterization of the Maximal Nutritional Value of Lactuca sativa (Lettuce) Based upon Elemental Analysis. *Analytical Letters*, 56(2), 331-343. <https://doi.org/10.1080/00032719.2022.2067557>
27. **Hategan, A. R.**, David, M., Dehelean, A., Cristea, G., Puscas, R., Molnar, A. J., Magdas, D. A. (2023). Impact of Pre-Processing Methods for the Identification of the Botanical Origin of Honey Based Upon Isotopic and Elemental Profiles. *Analytical Letters*, 56(2), 231-243. <https://doi.org/10.1080/00032719.2022.2044347>
28. Magdas, D. A., Cristea, G., Pîrnau, A., Feher, I., **Hategan, A. R.**, Dehelean, A. (2021). Authentication of Transylvanian Spirits Based on Isotope and Elemental Signatures in Conjunction with Statistical Methods. *Foods*, 10(12), 3000. <https://doi.org/10.3390/foods10123000>
29. **Hategan, A. R.**, Puscas, R., Cristea, G., Dehelean, A., Guyon, F., Molnar, A. J., Mirel, V., Magdas, D. A. (2021). Opportunities and Constraints in Applying Artificial Neural Networks (ANNs) in Food Authentication. Honey—A Case Study. *Applied Sciences*, 11(15), 6723. <https://doi.org/10.3390/app11156723>

## II. Book chapters

1. Ciulu, M., **Hategan, A. R.**, David, M., Magdas, D. A., Quirantes-Piné, R., & Borrás-Linares, I. (2024). Non-destructive Analytical Technologies for the Analysis of Honey and Related Bee-Based Products. In *Non-invasive and Non-destructive Methods for Food Integrity* (pp. 281-302). Cham: Springer Nature Switzerland. [https://doi.org/10.1007/978-3-031-76465-3\\_13](https://doi.org/10.1007/978-3-031-76465-3_13)

## III. Patents/ patent applications

1. **Hategan Ariana-Raluca**, Magdas Dana-Alina, Grosan Ana-Camelia, Procedure for discriminating wines with respect to the cultivar, geographical origin and vintage based on spectroscopic data and machine learning algorithms, OSIM no. a 2024 00131 / 25.03.2024.

## IV. Participations in international conferences

### a. Oral presentations

1. **Hategan, A. R.**, David, M., Pîrnau, A., Cozar, B., Magdas, D. A. Spectral data fusion and machine learning based analysis for the construction of new wine authentication tools. Final International Conference SensAIfood, organized on behalf of **Cost Action IG19145 - Artificial intelligence methods for spectral data processing to solve food fraud and authenticity issues**, 8-10 October 2025, Tirana, Albania – **Travel Grant**
2. **Hategan, A. R.**, David, M., Pîrnau, A., Cozar, B., Magdas, D. A. Data fusion of multi-source spectral data for the authentication of food and beverages. 8<sup>th</sup> IMEKOFOODS Conference, 22-24 September 2025, Ljubljana, Slovenia – **Young Scientist Support grant**

3. **Hategan, A. R.**, David, M., Pirnau, A., Cozar, B., Magdas, D. A. Enhancing wine recognition through the fusion of  $^1\text{H}$ -NMR and Raman spectral data. 15<sup>th</sup> International Conference PIM – Processes in Isotopes and Molecules, 16-19 September 2025, Cluj-Napoca, Romania.
4. **Hategan, A. R.**, Pirnau, A., Magdas, D. A. Artificial Intelligence in association with  $^1\text{H}$ -NMR spectroscopy for the development of wine authentication models. 6<sup>th</sup> World Congress of Vine and Wine, 16-20 June 2025, Chisinau, Republic of Moldova.
5. **Hategan, A. R.**, David, M., Pirnau, A., Cozar, B., Cinta-Pinzaru, S., Guyon, F., Magdas, D. A.  $^1\text{H}$ -NMR and Raman data fusion: a new strategy for the development of reliable wine authentication models. 11<sup>th</sup> International Symposium on Recent Advances in Food Analysis, 5-8 November 2024, Prague, Czech Republic.
6. **Hategan, A. R.**, Dehelean, A., Puscas, R., Cristea, G., Magdas, D. A. The Development of Food Authentication Models with a High Generalizability Power Using Artificial Neural Networks. 7<sup>th</sup> edition of the International Conference on Analytical and Nanoanalytical Methods for Biomedical and Environmental Sciences, “IC-ANMBES 2024”, 17-20 September 2024, Brasov, Romania – **best presentation award, IUPAB bursary**
7. **Hategan, A. R.**, Guyon, F., Gaillard, L., Magdas, D. A. Honey Authentication through a New Strategy based on  $^{13}\text{C}$ -NMR and Machine Learning. 3<sup>rd</sup> International Congress on Bee Sciences, 24-26 April 2024.
8. **Hategan, A. R.**, Pirnau, A., Magdas, D. A. Applications of Artificial Intelligence in recognizing the origin of wine based on  $^1\text{H}$ -NMR spectroscopy. 14<sup>th</sup> International Conference PIM – Processes in Isotopes and Molecules, 19-22 September 2023, Cluj-Napoca, Romania.
9. **Hategan, A. R.**, Dehelean, A., Cristea, G., Puscas, R., Magdas, D. A. Application of Artificial Intelligence in the development of honey differentiation models. A comparison among the efficiency of several Machine Learning algorithms. 10<sup>th</sup> International Symposium on Recent Advances in Food Analysis, 6-9 September 2022, Prague, Czech Republic – **travel grant**
10. **Hategan, A. R.**, Dehelean, A., Cristea, G., Puscas, R., Magdas, D. A. Application of Artificial Intelligence for food differentiation. Honey – a case study. 10<sup>th</sup> International Conference Agriculture & Food, 16-19 August 2022, Burgas, Bulgaria.
11. **Hategan, A. R.**, David, M., Dehelean, A., Cristea, G., Puscas, R., Molnar, A. J., Magdas, D. A. Application of Machine Learning algorithms for the botanical origin assessment of honey using isotope and elemental profiles. 2<sup>nd</sup> Workshop on Applied Deep Learning (WeADL 2022), 3 June 2022.

#### **b. Poster presentations**

1. **Hategan, A. R.**, David, M., Cristea, G., Dehelean, A., Puscas, R., Magdas, D. A. Machine learning in association with isotope and elemental profiling for the development of pork meat recognition models. 4<sup>th</sup> Food Chemistry Conference, 14-16 October 2025, Glasgow, Scotland, UK.
2. **Hategan, A. R.**, Pirnau, A., Cozar, B., Cinta-Pinzaru, S., Guyon, F., Magdas, D. A. Fusing  $^1\text{H}$ -NMR and Raman experimental data for a new wine recognition strategy. 3<sup>rd</sup> Food Chemistry Conference, 10-12 October 2023, Dresden, Germany.

3. **Hategan, A. R.**, Dehelean, A., Puscas, R., Cristea, G., Magdas, D. A. Artificial Intelligence for empowering the performance of honey recognition models. 3<sup>rd</sup> Food Chemistry Conference, 10-12 October 2023, Dresden, Germany.
4. **Hategan, A. R.**, Pirnau, A., Magdas, D. A. Application of Machine Learning techniques for assessing the origin of wine based on <sup>1</sup>H-NMR spectroscopy. 25<sup>th</sup> International Conference Materials, Methods & Technologies, 17-20 August 2023, Burgas, Bulgaria.
5. **Hategan, A. R.**, Magdas, D. A. A comparison among distinct data pre-processing methods for the improvement of wine recognition models. 10<sup>th</sup> International Conference Agriculture & Food, 16-19 August 2022, Burgas, Bulgaria.
6. **Hategan, A. R.**, Puscas, R., Cristea, G., Dehelean, A., Molnar, A. J., Mirel, V., Magdas, D. A. Applications of ANNs in honey recognition based on isotopic and elemental content. 13<sup>th</sup> International Conference PIM – Processes in Isotopes and Molecules, 22-24 September 2021, Cluj-Napoca, Romania – **best poster award** at the section “Stable Isotopes, Labeled Compounds and Analytical Techniques”

#### c. Flash presentations

1. **Hategan, A. R.**, David, M., Dehelean, A., Cristea, G., Puscas, R., Molnar, A. J., Magdas, D. A. The efficiency of data pre-processing for honey botanical differentiation through the association of elemental and isotopic profiles and supervised methods. XVIII<sup>th</sup> edition of the International Conference "Students for Students", 6-10 April 2022, Cluj-Napoca, Romania.

### V. Participations in other conferences

#### a. Oral presentations

1. **Hategan, A. R.**, Dehelean, A., Puscas, R., Cristea, G., Belc, N., Mustatea, G., David, M., Pirnau, A., Magdas, D. A. Aplicații ale Inteligenței Artificiale în controlul autenticității alimentelor, Evaluarea riscurilor pe filiera alimentară prin abordarea conceptului One Health, 10-11 octombrie 2024, Cluj-Napoca, România.

### VI. Invited lectures (co-authored)

#### 1. Invited speaker

Magdas, D. A., **Hategan, A. R.**, David, M. Data Fusion of Multi-Source Spectral Data for Food Recognition. Smart Diaspora 2025, 6th edition, 4-7 November 2025, Cluj-Napoca, Romania.

#### 2. Keynote speaker

Magdas, D. A., David, M., **Hategan, A. R.**, Magdas, T. M. Rare Earth Elements: an overview on the current demand and the imminent environmental and health challenges. N.I.C.E. International Rendez-Vous, An international conference on Bio-Inspiration & Biobased approaches, Summer Event, 23-25 June 2025, Nice, France. This conference is endorsed by the CNRS through GDR 2088, the Materials Research Society (MRS), the European Materials Research Society (E-MRS), the International Union of Pure and Applied Chemistry (IUPAC).

### 3. Keynote speaker

Magdas, D. A., **Hategan, A. R.**, David, M., Berghian-Grosan, C. Green analytical techniques in association with Artificial Intelligence for subtle food fraud detection. International Bio-Inspiration N.I.C.E. Summer Event, 19-21 June 2024, Nice, France. This conference is endorsed by the CNRS through GDR 2088, the Materials Research Society (MRS), the European Materials Research Society (E-MRS), the International Union of Pure and Applied Chemistry (IUPAC).

### 4. Keynote speaker

Magdas, D. A., **Hategan, A. R.**, David, M., Berghian-Grosan, C. Application of Raman spectroscopy as a rapid tool for beverages and food authentication. International Bio-Inspiration N.I.C.E. Summer Event, 20-22 June 2023, Nice, France. This conference is endorsed by the CNRS through GDR 2088, the Materials Research Society (MRS), the European Materials Research Society (E-MRS), the International Union of Pure and Applied Chemistry (IUPAC).

### 5. Invited speaker

Magdas, D. A., David, M., **Hategan, A. R.**, Puscas, R., Dehelean, A., Cristea, G., Berghian-Grosan, C. Application of acknowledged and emerging approaches for food authentication. Honey – a case study, 6th International Conference on Analytical and Nanoanalytical Methods for Biomedical and Environmental Sciences (IC-ANMBES), 8-10 June 2022, Braşov, Romania.