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Pr Hafida HANINE

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Université Sultan Moulay Slimane- Beni Mellal

Hanine Hafida is Professor of Agriculture and Food processing and Membre of the laboratory for Industrial Engineering (LGIIS) at the Université Sultan Moulay Slimane-Beni Mellal, born in Meknes (1966), she received his engineer diploma (1990) and his PhD (1991) degree in process engineering from the Institut National Polytechnique de Toulouse. After periods of postdoctoral research work with INRA of Narbonne (France) (1991-1997), she spent two years (1997-1999) as senior researcher at University of Cadi Ayyad. In 1996, she moved to the University of Sultan Moulay Slimane (Beni mellal) as assistant professor and since 2006 holds the position of Professor of Food Chemistry and Food Engineering at the University of Sultan Moulay Slimane. His research activity is documented by more than 90 scientific peer-reviewed papers, and about the same number of communications to scientific meetings, 5 book chapters and 1 patents. His main research interests have focused on innovative and sustainable extraction techniques (especially microwave, ultrasound and green solvents) for food, pharmaceutical and cosmetic applications. She is co-ordinator of a some europeans projects (2 PRIMA) , (2 FOSC ERANET), (LEARP), PHC TOUBKAL, etc,

He is main other reserach focused on Trees fruit culture, viticulture, water management of irrigation, soil science, Biotechnology and valorization of agroproducts

Situation actuelle:

- Vice Présidente en Charge de la Recherche Scientifique, Partenariat et Coopération
- Professeur PES(C,) Procédés agroalimentaire et Qualité
- Chercheur au Laboratoire de Génie Industrielle et Ingénierie des surfaces, Faculté des Sciences et Techniques de Béni Université Sultan Moulay Slimane, Mellal- Maroc.
- Membre du projet de création de la Chaire UNESCO » Gender Democracy and Quality Education »**

Projets depuis 2021:

- 1- Membre du projet Valorisation scientifique et technologique par l'innovation des produits des terroirs marocain : plantes aromatiques et médicinales en IAA et ICPC (R2BINNOVA) » avec Faculté des Sciences Semlalia Marrakech (2016-2019).
- 2- Coordonnatrice du projet PH Hongrie « Analysis of the benefit of plant growth promoting rhizobacteria on faba bean and pepper plants under abiotic stresses (2019-2021). Group, NARIC, Agricultural Biotechnology Institute Hungary (Dr Peter Kalo)
- 3-NRDIO/CNRST projet (le Rhizobia and improve of faba bean and peper production 2018 TET-MC 2018-2022) 00018)
- 4-Programme de financement (Action intégrée, Action concerté, etc) : (MCRDV)

*Membre du projet MCRDV : Optimisation de la valorisation de figuier par le biais du choix variétal et l'amélioration des procédés de séchage et de transformation (jamal Charafi) (2019-2021).

* Membre du projet MCRDV : Valorisation des ressources génétiques oléagineuses par la mise au point d'huile monovariétale et d'huile de mélange de graines de bonne qualité alimentaire et nutritionnelle. Valorisation de la filière oléagineuse. Partenaires impliqués : INRA Meknès Responsable du projet : Dr. NABLOUSSI Abdelghani (2019-2021)

*Membre du projet :Promotion de grenadier comme culture résiliente aux changements climatiques en zone de piémont du moyen Atlas et la plaine de Saiss. Partenaires impliqués : ENA Meknès Responsable du projet : Pr. Hakim Outghouliast (2018-2021)

5-Coordonnatrice du Projet FOSC **CREATE**: « Cross-Border Climate Vulnerabilities and Remote Impacts of Food Systems of the EU, Turkey and Africa: Trade, Climate Risk and Adaptation» (2021-2023)

6- Coordonnatrice du projet **PHC Toubkal, 2022-2024**, USMS-University of Bretagne, France, "MIXED SOLAR / ELECTRIC DRYING COUPLE A DIC OF APRICOT CHERRY AND FIG"

7-Coordonnatrice **Projet PRIMA section 2 TECHONEY** « Development of a blockchain-based ecosystem that allows an improved positioning of small producers of honey on local and international markets »2021-2024

8- Coordinatrice **Projet PRIMA section 2 AgrEcoMed** : « New agroecological approach for soil fertility and biodiversity restoration to improve economic and social resilience of mediterranean farming systems (2022-2024)

9-Membre du projet **LEAP-RE Vil2Bio** : Combining Village-Scale Biogas Production with Pyrolysis in Biomass Stoves (2022-2025)

Activités d'Expertises : Experte associée auprès du CNRST (2017-2020),

-Experte Evalueur associée auprès CNRST (2020-2023)

. -Experte évaluateur associée OCP (depuis 2020)

-Expert évaluateur associée auprès de l'UM6P.(2023...)

- Référée de plus de 20 Revues Internationaux (Food engineering, Food Chemistry, International Journal of agricultural, ASC chemistry etc)

Publications :

1- H.RIZKI, M.MOUHIB, A.NABOULSI, F.KZAIBER, H.LATRACHE, **H.HANINE**, Effect of different doses of gamma irradiation on biochemical and microbiological properties of sesame (*Sesamum indicum* L.) seeds. Moroccan Journal of Chemistry, 2019, vol. 7, no 3, p. 7-3 (2019) 538-547

- 2-L. HSSAINI, **H. HANINE** , R. RAZOUK , S. ENNAHLI , A. MEKAOUI AND J. CHARAFI, Characterization of local fig clones (*Ficus carica* L.) collected in Northern Morocco. Fruits, 2019, vol. 74, no 2, p. 55-64.

-3-Hamza Ourradi, Said Ennahli, Manuel Viuda Martos, Francisca Hernadez, Chiara Dilenzo, Lahcen Hssaini, Abderraouf Elantari and **Hafida Hanine**. Proximate composition of polyphenolic, phytochemical, antioxidant activity content, and lipid profiles of date palm seeds oils (*Phoenix dactylifera* L.). *J. Sci. Food Agric.* 6: 1-10. <https://doi.org/10.1016/J.JAFR.2021.100217>.

-4- Hamza OURRADI, Said ENNAHLI, Lahcen HSSAINI, Manuel VIUDA MARTOS, Francisca HERNADEZ and **Hafida HANINE**. Date seeds (*Phoenix dactylifera*. L.) in Morocco: Phenolic profiling and *in vitro* antioxidant potency..*Trop. J. Nat. Prod. Res.* 6(4): 563-571. <https://doi.org/10.26538/tjnpr/v6i4.17>

- 5- Hamza OURRADI, Nabila LAHBOUBI, Sanae HABCHI, **Hafida HANINE** and Hassan EL BARI. Methane production from date seed cake (*Phoenix dactylifera* L.) using mesophilic fed-batch anaerobic digestion. *Clean was. Syst. J.* 2 : 100009. <https://doi.org/10.1016/j.clwas.2022.100009>
- 6- Boubekraoui, H., Forsal, I., Ourradi, H., Elkhoutfi, Y., & **Hanine, H.** Effect of dates extracts as environmentally friendly corrosion inhibitor for carbon steel in 1M HCL solution. *Anal. Bioanal. Electrochem.* 2020,12(6): 828-840.
- 7- H. Merzouki , M. Merzouki , **H. Hanine** , B. Lekhlif , H. Anarghou, Physicochemical, bacteriological and ecotoxicological characterization of the leachate of the Fkih Ben Salah landfill (Morocco), *J. Mater. Environ. Sci.*, 2018, Volume 9, Issue 3, Page 939-945 <https://doi.org/10.26872/jmes.2018.9.3.104> <http://www.jmaterenvironsci.com>
- 8- Merzouki H., **Hanine H.**, Lekhlif B., Mandi L., Merzouki M., Physico-chemical Traitement of Leachates Case of the Landfill of Fkih Ben Salah, Morocco. *IOSR Journal of Environmental Science, Toxicology and Food Technology (IOSR-JESTFT)* e-ISSN: 2319-2402, p- ISSN: 2319-2399. Volume 10, Issue 12 Ver. I (Dec. 2016), PP 41-50 .
- 9- Said Ennahli, Sorkel Kadir, Houchang Khatamian, David Scurlock & **Hafida Hanine**, Physiological and Biochemical Responses to Partial Root-Zone Drying of Three Grape Cultivars, eISSN 2197-0025 *Theor. Exp. Plant Physiol.* DOI 10.1007/s40626-015-0040-8 10 L. 7
- 10- L. HSSAINI, **H. HANINE** , R. RAZOUK , S. ENNAHLI , A. MEKAOUI AND J. CHARAFI, Comparative analysis and physio-biochemical screening of an ex-situ fig (*Ficus carica* L.) collection. *Horticulture, Environment, and Biotechnology*, 2019, vol. 60, no 5, p. 671-683.
- 11- RACHIDA OUAABOU; BOUCHRA NABIL; MOURAD OUHAMMOU; ALI IDLIMAM; ABDELKADER LAMHARRAR; SAID ENNAHLI; **HAFIDA HANINE**; MOSTAFA MAHROUZ, Impact of solar drying process on drying kinetics, and on bioactive profile of Moroccan sweet cherry, *Renewable Energy*, 2020, vol. 151, p. 908-918.
- 12- Hssaini, **H. Hanine** , R. Razouk , S. Ennahli , A. Mekaoui and J. Charafi (2019): Comparative analysis and physio-biochemical screening of an ex-situ fig (*Ficus carica* L.) collection, *Horticulture, Environment, and Biotechnology*, Volume 60, Issue 5, pp 671–683 First Online: DOI:<https://doi.org/10.1007/s13580-019-00170-4> Lien : <https://link.springer.com/article/10.1007/s13580-019-00170-4> L.
- 13- Hssaini, **H. Hanine** , R. Razouk , S. Ennahli , A. Mekaoui and J. Charafi (2019) : Assessment of genetic diversity in Moroccan fig (*Ficus carica* L.) collection by combining morphological and physicochemical descriptors *Genetic Resources and Crop Evolution* Publisher Name: Springer Netherlands First Online: DOI:<https://doi.org/10.1007/s10722-019-00838-x> Lien:<https://link.springer.com/article/10.1007/s10722-019-00838-x> L.
- 14- Hssaini, **H. Hanine** , R. Razouk , S. Ennahli , A. Mekaoui and J. Charafi (2019): Comparative Study and Diversity Screening Using of Morphoagronomic and Biochemical of Fig (*Ficus carica* L.) Germplasm. *International Journal of fruit* (sous presse)
- 15- Ouaabou, R., Ennahli, S., Nabil, B., Hssaini, L., **Hanine, H.**, Hernández, F., Ouhammou, M., Mahrouz, M., 2020. Multivariate cherry quality assessment using morphological, biochemical and volatile compounds traits (in press). *International Journal of fruits*.

- 16-Ouaabou, R., Nabil, B., Ouhammou, M., Idlimam, A., Lamharrar, A., Ennahli, S., **Hanine, H.**, Mahrouz, M., 2019. Impact of solar drying process on drying kinetics, and on bioactive profile of Moroccan sweet cherry. *Journal of Renewable Energy*, [Volume 151](#), May 2020, Pages 908-918.
- 17-Ouaabou, R., Nabil, B., Hidar, N., Lahnine, L., Ouhammou, M., Idlimam, A., Lamharrar, A., **Hanine, H.**, Mahrouz, M., 2018. Valorization of solar drying process in the production of dried Moroccan sweet cherries. *Journal of Solar Energy*. [Volume 172, Part 2](#), 15 September 2018, Pages 158-164
- 18-Ouaabou, R., Ennahli, S., Nabil, B., Hssaini, L., **Hanine, H.**, Hernández, F., Ouhammou, M., Mahrouz, M., 2020. Multivariate cherry quality assessment using morphological, biochemical and volatile compounds traits , *International Journal of fruits*. V20, 2020, issue sup3
- 19-Ouaabou, R., Nabil, B., Hidar, N., Lahnine, L., Ouhammou, M., Idlimam, A., Lamharrar, A., **Hanine, H.**, Mahrouz, M., 2018. Valorization of solar drying process in the production of dried Moroccan sweet cherries, *Volume 172, Part 2* , 15 September 2018, Pages 158-164
- 20- Mohamed Kouighat, **Hafida Hanine**, Mohamed El Fechtali & Abdelghani Nabloussi, Assessment of some sesame mutants under normal and water-stress conditions , *Journal of Crop Improvement* 2023-05-04 | DOI: 10.1080/15427528.2022.2095685.
- 21-Kouighat, M., **Hanine, H.**, El Fechtali, M., & Nabloussi, A. (2021). First report of sesame mutants tolerant to severe drought stress during germination and early seedling growth stages. *Plants*, 10(6), 1166.
- 22- Kouighat, M., El Harfi, M., **Hanine, H.**, El Fechtali, M., & Nabloussi, A. (2022). Moroccan sesame: Current situation, challenges, and recommended actions for its development. *OCL*, 29,27.
- 23- Kouighat, M., Nabloussi, A., Adiba, A., Fechtali, M. E., & **Hanine, H.** (2022). First Study of Improved Nutritional Properties and Anti-Oxidant Activity in Novel Sesame Mutant Lines as Compared to Their Wild-Types. *Plants*, 11(9), 1099.
- 24- Kouighat, M., **Hanine, H.**, El Fechtali, M., & Nabloussi, A. (2022). Assessment of some sesame mutants under normal and water-stress conditions. *Journal of Crop Improvement*, 1-17.
- 25- Kouighat, M., **Hanine, H.**, Chetto, O., Fakhour, S., El Fechtali, M., & Nabloussi, A. (2022). Assessment of Novel Genetic Diversity Induced by Mutagenesis and Estimation of Genetic Parameters in Sesame M4 Mutant Lines. *International Journal of Plant Biology*, 13(4), 644-662.
- 26- Serena Indelicato, Karim Houmanat, David Bongiorno, Assia Ejilani, Lahcen Hssaini, Rachid Razouk, Jamal Charafi, Said Ennahli, **Hafida Hanine** , Freeze dried pomegranate juices of Moroccan fruits: main representative phenolic compounds *Journal of the Science of Food and Agriculture* 2023-02 | DOI: 10.1002/jsfa.12229
- 27- Nadia Naim, Nabil Ennahli , **Hafida Hanine** , Rachid Lahlali , Abdessalem Tahiri, Marie-Laure Fauconnier , Ilham Madani , Said Ennahli, ATR-FTIR spectroscopy combined with DNA barcoding and GC-MS to assess the quality and purity of saffron (*Crocus sativus* L.), *Vibrational Spectroscopy*, [Volume 123](#), November 2022, 103446
- 28- Hafida Zitouni, Marie Laure Fauconnier, Lahcen Hssaini, Rachida Ouaabou, Manuel Viuda-Martos, Francisca Hernández, Sezai Ercisli, Lhoussain Ait Haddou, Zerhoun Messaoudi & **Hafida Hanine** , Phenols,

Volatile Compounds, Organic Acids and Antioxidant Activity of Strawberry Tree (*Arbutus Unedo* L.) Fruits Belonging to Five Genotypes Growing in Morocco International Journal of Fruit Science 2022-12-31 | DOI: 10.1080/15538362.2022.2037038

-29- Rachida Ouaabou, Said Ennahli, Lahcen Hssaini, Bouchra Nabil, Ali Idlimam, Abdelkader Lamharrar, Mostafa Mahrouz, **Hafida Hanine**, Moisture Sorption Isotherms of Sweet Cherry (*Prunus Avium* L.): Comparative Study of Kinetics and Thermodynamic Modeling of Five Varieties International Journal of Food Science 2022-10-26 | Journal article DOI: 10.1155/2022/6786590

-30- Mohamed Kouighat, Abdelghani Nabloussi, Atman Adiba, Mohamed El Fechtali and **Hafida Hanine**, Assessment of genetic diversity in Moroccan sesame (*Sesamum indicum*) using ISSR molecular markers OCL 2021 | Journal article DOI: 10.1051/ocl/2020072 8

-31- R Ouaabou, S Ennahli, C Di Lorenzo, **H Hanine**, A Bajoub, R Lahlali, A Idlimam , Hygroscopic Properties of Sweet Cherry Powder: Thermodynamic Properties and Microstructural Changes Journal of Food Quality 2021-12-01 | DOI: 10.1155/2021/3925572

-32- Lahcen Hssaini¹, Kaoutar Elfazazi¹, Rachid Razouk¹, Rachida Ouaabou, Francisca Hernandez, **Hafida Hanine**, Jamal Charafi, Karim Houmanat , Rachid Aboutayeb' Combined Effect of Cultivar and Peel Chromaticity on Figs' Primary and Secondary Metabolites: Preliminary Study Using Biochemical and FTIR Fingerprinting Coupled to Chemometrics , Biology 2021-06 DOI: 10.3390/biology10070573

-33- M Kouighat, **H Hanine**, M El Fechtali, A Nabloussi ,First Report of Sesame Mutants Tolerant to Severe Drought Stress during Germination and Early Seedling Growth Stages Plants 2021-06 | Journal article | Author DOI: 10.3390/plants10061166

-34- Hssaini L, Hernandez F, Viuda-Martos M, Charafi J, Razouk R, Houmanat K, Ouaabou R, Ennahli S, Elothmani D, Hmid I, Fauconnier ML, **Hanine H**. Survey of Phenolic Acids, Flavonoids and In Vitro Antioxidant Potency Between Fig Peels and Pulps: Chemical and Chemometric Approach Molecules 2021-04 | Journal article | Author DOI: 10.3390/molecules26092574

-35-Zitouni H, Hssaini L, Ouaabou R, Viuda-Martos M, Hernández F, Ercisli S, Ennahli S, Messaoudi Z, **Hanine H**. Exploring Antioxidant Activity, Organic Acid, and Phenolic Composition in Strawberry Tree Fruits (*Arbutus unedo* L.) Growing in Morocco, Plants (Basel),. 2020 Nov 30;9(12):1677. doi: 10.3390/plants9121677

-36-Hssaini L, Ouaabou R, **Hanine H**, Razouk R, Idlimam A., Kinetics, energy efficiency and mathematical modeling of thin layer solar drying of figs (*Ficus carica* L.), Sci Rep. 2021 Oct 28;11(1):21266. doi: 10.1038/s41598-021-00690-z.

-37-Ouaabou R, Ennahli S, Hssaini L, Nabil B, Idlimam A, Lamharrar A, Mahrouz M, **Hanine H**. Moisture Sorption Isotherms of Sweet Cherry (*Prunus Avium* L.): Comparative Study of Kinetics and Thermodynamic Modeling of Five Varieties, Int J Food Sci. 2022 Oct 26;2022:6786590. doi: 10.1155/2022/6786590. eCollection 2022.

-38- El Harfi M., Charafi J., Houmanat K., **Hanine H.**, Nabloussi , Assessment of genetic diversity in Moroccan sesame (*Sesamum indicum*) using ISSR molecular markers, A.,OCL - Oilseeds and fats, Crops and Lipids

-39- Ouradi H., **Hanine H.**, Fauconnier M.-L., Kenne T., Rizki H., Ennahli S., Hssaini L. Determination of physico-biochemical proprieties and composition in volatile constituents by solid phase micro-extraction of honey samples from different botanical and geographical origins in Morocco Journal of Apicultural Research 2021-01-01 | Journal article DOI: 10.1080/00218839.2020.1718339

-40- Zitouni H., Hssaini L.H., Ouaabou R., ...Hachimi H, Zerhoune M., **Hanine H** , Functionnal and Technological Properties of Five Strawberry (*Arbutus Unedo* L.) Fruit as Bioactive Ingredients in Functional Foods International Journal of Food Properties 2021-01-01 | Journal article DOI: 10.1080/10942912.2021.1883058

-41- Houmanat K., Abdellah K., Hssaini L.,Hanine H, Jaafary S., Charafi , Molecular Diversity of Walnut (*Juglans regia* L.) Among Two Major Areas in Morocco in Contrast with Foreign Varieties International Journal of Fruit Science 2021-01-01 | Journal article DOI: 10.1080/15538362.2020.1862734

-42-Mina El Bajja, **Hafida Hanine**, Said En-Nahli, Rafel Socias I Company, and Ossama Kodad, Morphological and Pomological Characteristics of Sweet Cherry (*Prunus Avium* L.) Grown In-situ under South Mediterranean Climate in Morocco International Journal of Fruit Science 2021-01-01 | DOI: 10.1080/15538362.2020.1858468

- 43- Omar Anor, Sara Lahmady, Issam Forsal , **Hafida Hanine**, Hamza Ourradi , Anas Elharami., An Experimental Investigation of a Date Seeds Hydroacetic Mixture Extract Inhibitor for Corrosion Inhibition of Carbon Steel in an Acidic Medium at High Temperatures., Biointerface Research in Applied Chemistry 13(3) DOI:[10.33263/BRIAC133.271](https://doi.org/10.33263/BRIAC133.271)
- 44- Lahcen Hssaini, **Hafida Hanine**, Jamal Charafi, Rachid Razouk, Abderraouf Elantari, Said Ennahli, Francisca Hernández and Rachida Ouabou First report on fatty acids composition, total phenolics and antioxidant activity in seeds oil of four fig cultivars (*Ficus carica* L.) grown in Morocco OCL 2020 | Journal article DOI: 10.1051/ocl/2020003
- 45- Zitouni H, Hssaini L, Ouabou R, Viuda-Martos M, Hernández F, Ercisli S, Ennahli S, Messaoudi Z, **Hanine H**. 2020. Exploring antioxidant activity, organic acid, and phenolic composition in strawberry tree fruits (*Arbutus unedo* L.) growing in Morocco. *Plants*, 9(12), 1677 , Exploring Antioxidant Activity, Organic Acid, and Phenolic Composition in Strawberry Tree Fruits *Arbutus unedo* L.) Growing in Morocco *Plants* 2020-11 | Journal article | *Author* DOI: 10.3390/plants9121677
- 46- Lahcen Hssaini, **Hafida Hanine**, Rachid Razouk, Said Ennahli, Abderrahman Mekaoui, Ibtissam Guirrou & Jamal Charafi, Diversity Screening of Fig (*Ficus Carica* L.) Germplasm through Integration of Morpho-agronomic and Biochemical Traits *International Journal of Fruit Science* 2020-10 | Journal article DOI: 10.1080/15538362.2019.1700871
- 47- H Zitouni, L Hssaini, Z Messaoudi, H Ourradi, M Viuda-Martos, F Hernández, S Ercisli, **H Hanine**, Components and Bioactivity Assessment among Twelve Strawberry (*Arbutus unedo* L.) Genotypes Growing in Morocco Using Chemometrics *Foods* 2020-09 DOI: 10.3390/foods9101345
- 48- Rachida Ouabou, Said Ennahli, Bouchra Nabil, Lahcen Hssaini, Hafida Hanine Multivariate Cherry Quality Assessment Using Morphological, Biochemical and Volatile Compound Traits *International Journal of Fruit Science* 2020-09-21 | Journal article DOI: 10.1080/15538362.2020.1785988
- 49- Lahcen Hssaini, Jamal Charafi, Rachid Razouk, Francisca Hernández, Marie-Laure Fauconnier, Said Ennahli, & **Hafida Hanine**, Assessment of Morphological Traits and Fruit Metabolites in Eleven Fig Varieties (*Ficus Carica* L.) *International Journal of Fruit Science* 2020-09-14 | Journal article DOI: 10.1080/15538362.2019.1701615
- 50- Rachida Ouabou , Bouchra Nabil , Mourad Ouhammou , Ali Idlimam, Abdelkader Lamharrar , Said Ennahli , **Hafida Hanine** , Mostafa Mahrouz, Impact of solar drying process on drying kinetics, and on bioactive profile of Moroccan sweet cherry *Renewable Energy* 2020-05 | Journal article DOI: 10.1016/j.renene.2019.11.078
- 51- Lahcen Hssaini, Jamal Charafi, **Hafida Hanine**, Said Ennahli, Abderrahman Mekaoui, Ali Mamouni & Rachid Razouk ,Comparative analysis and physio-biochemical screening of an ex-situ fig (*Ficus carica* L.) collection *Horticulture, Environment, and Biotechnology* 2019-10 | Journal article DOI: 10.1007/s13580-019-00170-4
- 52- Zitouni H, Hssaini L, Messaoudi Z, Ourradi H, Viuda-Martos M, Hernández F, Ercisli S, **Hanine H**. 2020. Phytochemical Components and Bioactivity Assessment among Twelve Strawberry (*Arbutus unedo* L.) Genotypes Growing in Morocco Using Chemometrics. *Foods*, Volume 9, Issue 10, 1345.

- 53- Zitouni H, Hssaini L, Ouaabou R, Viuda-Martos M, Hernández F, Ercisli S, Ennahli S, Messaoudi Z, **Hanine H**. 2020. Exploring Antioxidant Activity, Organic Acid, and Phenolic Composition in Strawberry Tree Fruits (*Arbutus unedo* L.) Growing in Morocco. *Plants*, Volume 9, Issue 12, 1677.
- 54. Sagbas H.I, Ilhan G, Zitouni H, Anjum M.A, **Hanine H**, Necas T, Ondrasek I, Ercisli S. 2020. Morphological and biochemical characterization of diverse strawberry tree (*Arbutus unedo* L.) genotypes from Northern Turkey. *Agronomy*, 10(10), 1581.
- 55- Zitouni H, Hssaini L, Ouaabou R, Viuda-Martos M, Hernandez F, Ercisli S, Hachimi H, Messaoudi Z, **Hanine H**. 2021. Functionnal and Technological Properties of Five Strawberry (*Arbutus Unedo* L.) Fruit as Bioactive Ingredients in Functional Foods. *International Journal of Food Properties*, Volume 24, N 1, 380-399.
- 55. Zitouni H, Fauconnier M-L, Hssaini L, Viuda-Martos M, Hernández F, Ercisli S, Messaoudi Z, Elothmani D, Ennahli S, **Hanine H**. 2021. Strawberry Trees (*Arbutus unedo* L.) Naturally Grown in Morocco: A Combined Study Using Headspace Solid Phase Microextraction Coupled with GC-MS and Physico-Morphological Screening. *ACS Food Science & Technology*.
- 56- Zitouni H, Fauconnier M-L, Hssaini L, Ouaabou R, Viuda-Martos M, Hernández F, Ercisli S, Ait Haddou L, Messaoudi Z, **Hanine H**. 2022. Phenols, Volatile Compounds, Organic Acids and Antioxidant Activity of Strawberry Tree (*Arbutus Unedo* L.) Fruits Belonging to Five Genotypes Growing in Morocco. *International Journal of Fruit Science*, Volume 22, N 1, 414-437.
- 57-HAFIDA ZITOUNI; LAHCEN HSSAINI; MESSAOUDI ZERHOUNE; HAMZA OURRADI; MANUEL VIUDA- MARTOS; FRANCISCA HERNANDEZ; SEZAI ERCISLI; **HAFIDA HANINE**, Phytochemical Components and Bioactivity Assessment among Twelve Strawberry(*Arbutus unedo* L.) Genotypes Growing in Morocco Using Chemometrics. *Foods*, 2020, vol. 9, no 10, p. 1345
- 58- HAFIDA ZITOUNI; LAHCEN HSSAINI; RACHIDA OUAABOU; MANUEL VIUDA-MARTOS; FRANCISCAHERNANDEZ; SEZAI ERCISLI; SAID ENNAHLI; ZERHOUNE MESSAOUDI; **HAFIDA HANINE**, Exploring Antioxidant Activity, Organic Acid, and Phenolic Composition in StrawberryTree Fruits (*Arbutus unedo* L.) Growing in Morocco. *Plants*, 2020, vol. 9, no 12, p. 1677
- 59- Zitouni H, Jamal Charafi, Messaoudi Zerhoune, Anas Hamdani, Ghizlane Kabiri, Karim Houmanat, **Hafida Hanine**. Assessment of genetic diversity in wild strawberry tree (*Arbutus unedo* L.) genotypes from Morocco based on ISSR molecular markers. *Agriculture & Forestry*, Vol. 69 Issue 4: 119-139, 2023, Podgorica
- 60- Ghizlane Kabiri, Oussama Kodad, Francisca Hernandez, Fatima Zahra Lachkham, Said Ennahli and **Hafida Hanine**, PHENOTYPIC DIVERSITY ASSESSMENT OF MOROCCAN LOQUAT USING MULTIPLE CORRESPONDENCE ANALYSIS, *Journal of Agricultural Sciences (Belgrade)* Vol. 68, No. 4, 2023, Pages 461-471 <https://doi.org/10.2298/JAS2304461K>
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