

Curriculum vitae

1. Personal

- Name: Professor Mohammad Hussein Ali Brake
- Date and place of birth: August 26th, 1972, Rahaba, Jordan
- Marital status: Married
- Address:
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2. Education

- B.Sc. degree in Biological Science: the science faculty, Yarmouk University, Irbid, Jordan (1990-1996).
- Ph.D. degree in Biotechnology: Padova University, Padova, Italy (2000-2004).
Ph.D. thesis: Characterization of Red Chicory grown in Veneto by means of molecular fingerprinting and genetic mapping.

3. Research interest

- Genetic Diversity: using molecular biology tools (molecular markers, genome sequencing) to assess the genetic diversity of plant species in Jordan.
- Molecular breeding: developing abiotic stress tolerant plants using molecular biology techniques.
- Food authentication: using molecular biology tools to detect food quality and safety.

4. Skills

- Languages:
Arabic: mother language
English: Good (B2: upper intermediate)
Italian: Good
- Software:
Microsoft software: word, Excel, PowerPoint
- Genetic software: NTSYS, Popgene, webcutter, primer3, OGDRAW
- Basic bioinformatics
- Articles writer in media (Alrai newspaper and Ammon news)

5. Positions

- Biology and Science Teacher (1996-1997): Military Culture Schools, Jordan.
- Biology and Science Teacher (1997-1998): Ministry of Education, Jordan.
- Researcher in Plant Biotechnology (6.2005-8.2008): National Agriculture Research Center (NARC), Baqa', Jordan.

- Assistant Professor (11.2007-5.2017): Jerash University, Jerash, Jordan.
- Associate Professor (5.2017-1.2023): Jerash University, Jerash, Jordan.
- Vice Dean of Scientific Research and Graduate Studies (10.2020-9.2022): Jerash University, Jerash, Jordan.
- Dean of the Science Faculty (10.2022-): Jerash University, Jerash, Jordan.
- Professor (2.2023-); Jerash University, Jerash, Jordan.

6. Other positions

- Part-Time researcher (2009-2012): Royal Scientific Society, Amman, Jordan.
- FAO Consultant (2.2008-3.2009): Establishment of a National Information Sharing Mechanism on the Global Plan of Action implementation in Yemen and the preparation of a Country Report on the State of the Plant Genetic resources for Food and Agriculture (PGRFA). Sana'a, Yemen.
- National FAO Consultant (2009-2010): Strengthening capacities towards the establishment of a regional platform for the detection of genetically modified organisms. Amman, Jordan.
- Head of Science department (10.2010-9.2012): Jerash University, Jerash, Jordan.
- Acting Dean of Scientific Research and Graduate Studies (10.2012-9.2103): Jerash University, Jerash, Jordan.
- Team member Project (2014-2017): Development of an Interdisciplinary Programme in Climate Change and Sustainability Policy, ERASMUS+.
- Evaluator of the outstanding researcher award in the agricultural and veterinary sciences sector (2017, one month): Scientific Research Fund/ Ministry of higher Education and Scientific Research, Amman, Jordan
- National consultant (2018, two months): Development of 5 project profiles in the field of sustainable food and agriculture, Ministry of Environment, Amman, Jordan.
- FAO Consultant (2019, one month): Translation of "preparation of country reports for the third report on the state of the world's plant genetic resources for food and agriculture" document to Arabic language.
- FAO Consultant (2020, two months): Technical expert for the preparation of reports for The Third Report on the State of the World's Plant Genetic Resources for Food and Agriculture.

7. Awards

- Analysis of apomixis in *Hypericum Perforatum* L. combining molecular markers and flow cytometry. ARZENTON F., BRAKE M., SGORBATI. S., VAROTTO S. Proceedings of the XLV Italian Society of Agricultural Genetics - SIGA Annual Congress, Salsomaggiore Terme, Italy – 26-29 September, 2001.

8. Funded Projects

- Development of Salinity Tolerant Tomato Genotypes Using Molecular Marker Assisted Selection (2009-2012): Scientific research Fund/Ministry of Higher Education and scientific Research, Amman, Jordan.
- Improvement of wheat landraces for heat tolerance (2009-2012): Scientific research Fund/Ministry of Higher Education and scientific Research, Amman, Jordan.
- Commercial production of Taq DNA polymerase (2008-2009): Support to Research, Technological Development and Innovation in Jordan (SRTD I), Higher Council for Science and Technology.
- Fraud detection in olive oil using molecular techniques (2014-20016): Support to Research, Technological Development and Innovation in Jordan (SRTD II), Higher Council for Science and Technology.
- Characterization of Jordanian Saltbush (*Atriplex* sp) Genotypes Adapted to Climate Change and Drought (2021-): Scientific research Fund/Ministry of Higher Education and scientific Research, Amman, Jordan.

9. Teaching courses

- General Biology (302101)
- Practical General Biology (302103)
- Economic Botany (302222)
- Genetics (302345)
- Practical Genetics (302346)
- Plant Physiology (302425)
- Practical Plant Physiology (302425)
- Biotechnology (302453)
- Practical Biotechnology (302454)
- Biodiversity (447)
- Human Genetics (302448)
- Molecular Biology (302456)

10. Attended training courses

- Mutation detection by using molecular techniques (4-8.12.2005), Atomic Energy Commission, Damascus, Syria.
- Introduction to biosafety for the environmental release of GMO crops (15-19.5.2006), The International Centre for Genetic Engineering and Biotechnology (ICGEB), Trieste, Italy.
- phylogentic studies (1-10.3.2007), California University, California, USA.
- Detection of GMOs in Food and Agriculture Products (18-22.11.2012), Biotechnology centre, Ministry of Environment, Doha, Qatar.

11. Trainer

- Introduction for polymerase chain reaction technique (March, 2009), Al Balga University, Al zarqa, Jordan.
- Introduction for polymerase chain reaction technique (April, 2009), Al Balga University, Al zarqa, Jordan.

- Introduction for polymerase chain reaction technique (May, 2009), Al Balga University, Al zarqa, Jordan.

12. Scientific Visit

- Application of biotechnology technique for food quality (8-25.10.2007), Parma University, Parma, Italy.

13. Conferences, seminars, and workshops (poster and talks)

- Mohammad Brake (February 2006) Characterization of Red Chicory grown in Veneto by means of molecular fingerprinting and genetic mapping. Biotechnology in Agriculture, Amman, Jordan.
- Mohammad S. Jawarneh, Mohammad H. Brake, Riad Muhidat, Hussein M Migdadi, Jamil N. Lahham, Ahmad Ali El-Oqlah (10-12.9.2012) Characterization of Quercus Species Distributed in Jordan Using Molecular Markers. International Conference on Applied Life Sciences. Konya, Turkey
- Mohammad Brake, Hussein M. Migdadi, Monther sadder, Lana Gadomi, Muien Qaryouti, Mahmoud Al-Khatib, Ahmad Ali El-Oqlah (10-14.11.2013) Microsatellite assessment of genetic diversity among Jordanian tomato (*Solanum lycopersicum* L.) Landrace. The International Plant Breeding. Antalya, Turkey
- Mohammad Brake (29/6-1/7.2015) Profiling salinity responsive genes for local Jordanian tomato landraces under salinity stress. Plant Abiotic stress III. Vienna, Austria.
- Mohammad Brake (5-6.7.2018) Influence of Storage Temperature and Duration of Tomato Leaf Samples on Proline Content. Plant Abiotic stress V. Vienna, Austria.
- Mohammad Brake (15-17.10.2018) Assessment of Genetic Diversity among Jordanian tomato (*Solanum lycopersicum* L.) landraces using ISSR molecular markers. Eighth Scientific Agricultural Conference. Mutah University, Karak, Jordan.
- Mohammad Brake (6-9.10.2022) Development of SSR Markers Linked to Stress Responsive Genes along Tomato Chromosome 3 (*Solanum lycopersicum* L.). XIII International Agriculture Symposium "AGROSYM 2022". Jahorina, Bosnia and Herzegovina.

14. Publications

1. Haddad.N.J, **Brake M.**, Migdadi H. de Merinda, J. (2008). First detection of honey bee viruses in Jordan by RT-PCR. Jordan Journal of Agricultural Sciences, 4 (3): 242-247.
2. Al Awamleh H.S, Hassawi D.S, Migdadi H.M, **Brake, M** . (2009). Molecular Characterization of Pomegranate (*Punica granatum* L.) Landraces Grown in Jordan Using Amplified Fragment Length Polymorphism (AFLP) Markers. Biotechnology, 8 (3): 316-322.
3. Mansour. M, Hassawi. D*, Migdadi. H, and **Brake. M**. (2011). Fingerprinting Date Palm Genotypes (*Phoenix dactylifera* L.) Using Inter Simple Sequence Repeat (ISSR) Markers. Journal of Genetic and Breeding, 63: 17-22.

4. Mahmoud AL-Khatib, **Mohammad Brake**, Muien Qaryouti, Khalaf Alhussaen and Hussein Migdadi (2012). Response of Jordanian tomato land races to *Fusarium oxysporum* F. sp. *Lycopersici*. Asian journal of Plant Pathology, 6 (3): 75-80.
5. Mohammad S. Jawarneh, **Mohammad H. Brake**, Riad Muhidat, Hussein M. Migdadi, Jamil N. Lahham, Ahmad Ali El-Oqlah¹ (2013). Characterization of *Quercus* species distributed in Jordan using morphological and molecular markers. African Journal of Biotechnology, 12(12): 1326-1334.
6. **Mohammad H Brake**, Hussein M. migdadi, Moath Al-Gharaibeh, Salam Ayoub, Nizar Haddad, Ahmad El Oqlah (2014). Characterization of Jordanian olive cultivars (*Olea europaea* L) using RAPD and ISSR molecular markers. Scientia Horticulturae, 176(11): 282-289.
7. Nizar Jamal Haddad , Ahmed Batainh, Deepti Saini, Osama Migdadi, Mohamed Aiyaz, Rushiraj Manchiganti, Venkatesh Krishnamurthy, Banan Al-Shagour, **Mohammad Brake**, Lelania Bourgeois, Lilia De Guzman, Thomas Rinderer, Zayed Mahoud Hamour (2016). Evaluation of *Apis mellifera syriaca* Levant region honeybee conservation using comparative genome hybridization. Genetica, 144(3):279-287.
8. **Mohammad H. Brake**, Hassan R. Hamasha, Hussein M. Migdadi, Ashraf O. Khashroum, Moath Al-Gharaibeh, Muien M Qaryouti and Mahmoud T. AL-KHAtib. (2017). Influence of storage temperature and duration of Tomato leaves samples on proline content. European Scientific Journal, **13(6): 116-123**.
9. Riyadh Muhaidat, **Mohammad H. Brake**, Mazhar Al Zoubi, Robert I. Colautti, Amjad Al-Nasser, Muheeb Awawdeh, Khalid Al-Batayneh, Wesam Al Khateeb, Athena D. McKown, Jamil Lahham and Ahmad El-Oqlah. (2018). Integrating morphological characters, molecular markers, and distribution patterns to assess the identity of *Blepharis* species from Jordan. Botanical Studies, **59:18**.
10. N. Haddad, H. Migdadi, R. Al-Atiyat, K. Jawasreh, S. Awabdeh, W. Obeidat, R. AlOmari, M. Aldamra, H. Ababneh, M.J. Tabbaa, **M. Brake** and M. Farooq. (2020). Whole Genome Resequencing of Jordanian Awassi Rams (*Ovis aries*) Using Hiseq Sequencing Technology: The First Step Towards Sheep Genomic Selection. Genetics and Molecular Research, **19(2)**.
11. **Mohammad H. Brake**, Moath A. Al-Gharaibeh, Hassan R. Hamasha, Nuha S. Al Sakarneh, Ibrahim A. Alshomali, Hussein M. Migdadi, Muien M. Qaryouti, Nizar J. Haddad. (2021). Assessment of genetic variability among Jordanian tomato landrace using inter-simple sequence repeats markers. Jordan Journal of Biological Sciences, **14(1): 91-95**.
12. Haddad, N., Migdadi, H., **Brake, M.**, Ayoub, S., Obeidat, W., Abusini, Y., Aburumman, A., Al-Shagour, B., AlAnasweh, E., and Sadler, M. (2021). Complete chloroplast genome sequence of historical olive (*Olea europaea* subsp. *europaea*) cultivar Mehras, in Jordan. Mitochondrial DNA Part B: Resources, **6(1): 194-195**.

13. **Brake, M.**, Migdadi, H., Sadder, M., Awabdeh, S., Jawasreh, K., Obeidat, W., AlOmari, R., and Haddad, N. (2021). Complete mitochondrial genome sequence of Awassi-Jo sheep breed (*Ovis aries*) in Jordan. Mitochondrial DNA Part B: Resources, **6(3): 1263-1264**.
14. Hussein Migdadi, Nizar Haddad, Ruba AlOmari, **Mohammad Brake**, Mustafa AlShdaifat, Sadeer Amasha, Monther sadder (2021). Re-sequencing of Whole Genome Jordanian Awassi Ewes using Hiseq Sequencing Technology: Major Step Towards Sheep Genomic Selection. Indian Journal of Animal Research, **DOI: 10.18805/B-1371**
15. **Mohammad Brake**, Lana Al-Qadumii, Hassan Hamasha, Hussein Migdadi, Abi Awad , Nizar Haddad, and Monther T. Sadder (2022). Development of SSR Markers Linked to Stress Responsive Genes along Tomato Chromosome 3 (*Solanum lycopersicum* L.). BioTech, **11, 34**. <https://doi.org/10.3390/biotech11030034>
16. Monther Sadder, **Mohammad Brake**, Salam Ayoub, Yahya Abusini, Ibrahim Al-Amad & Nizar Haddad (2023). Complete mitochondrial genome sequence of historical olive (*Olea europaea* Linnaeus 1753 subsp. *europaea*) cultivar Mehras in Jordan. Mitochondrial DNA Part B: Resources, **8(11): 1205-1208**, DOI: 10.1080/23802359.2023.2275828
17. Wesam Al Khateeb, Ihsan Sababheh, **Mohammad Brake**, Baker Al Shara, Mohammad Jawarneh, Mohammad Y. Jahmani, Fatima Abusahyoun, and Muhammad Al-u'datt (2024). Assessment of Cowpea (*Vigna unguiculata*) Genetic Diversity using ISSR Markers, Biochemical Content and Agro-Morphological Traits. Intl J Agric Biol 31:269–276.
18. Wesam Al Khateeb, Azhar Ananzeh, Muhammad Alu'datt, and **Mohammad Brake** (2024). Genetic diversity of bottle gourd (*Lagenaria siceraria* (Molina) Standl.) landraces in Jordan assessed by Agromorphological traits and Inter Simple Sequence Repeat markers. Jordan Journal of Biological Sciences, 17(3): 513-522.