Dr. Heidar Meftahizade

Associate Professor, Department of Horticultural Sciences,
Specialization: Medicinal and Aromatic Plants

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Personal Information

Full Name: Dr. Heidar Meftahizade
Date of Birth: May 22, 1984
https://scholar.google.com/citations?user=9ijLgLMAAAAJ&hl=en
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Education
Ph.D. in Horticultural Sciences, Medicinal and Aromatic Plants
University of Guilan, Iran
GPA: 19.32/20 – Ranked 1st
M.Sc. in Horticultural Plant Breeding
University of Tehran, Aburaihan Campus, Iran
GPA: 18.40/20 – Ranked 1st
B.Sc. in Agronomy and Plant Breeding
University of Ilam, Iran.
GPA: 17.04/20 – Honor Student

Thesis & Dissertation

Ph.D. Dissertation:
Effects of Irrigation Intervals and Planting Dates on Seed Yield, Phytochemical Traits, and Gum Physicochemical Properties of Three Guar (*Cyamopsis tetragonoloba*) Genotypes.

M.Sc. Thesis:
Investigation of Regeneration, Tissue Culture, and Cell Suspension Culture in Lemon Balm (*Melissa officinalis*)

Honors, Awards & Professional Appointments

- Recognized as a **Leading Innovation-Oriented Researcher** among Faculties of Agriculture and Natural Resources nationwide, Iran.
- Selected as **Top Technologist** and **Distinguished Researcher** of the Ardakan University.
- Awarded as **Outstanding Faculty Member** in University–Industry and Community Engagement in Ardakan University.
- Director, **National Industrial Scholarship Program for talented Students.**
- Principal Investigator of a **Nationally Selected Research Project** among faculty members across the country
- Principal Investigator of a **Selected Project (5th Round)** under the **Ahmadi Roshan Elite Foundation Program** (National Elite Foundation).
- Director of **Industry and Community Relations**, University of Ardakan and Meybod.
- Former Head, **Yazd Provincial Elite Foundation** (Ranked 1st among all provinces nationwide).
- Former Head, **Tehran Provincial Elite Foundation**.
- Member, **Scientific Committee**, Tehran Municipality Research Center & Higher Education Planning Council of Tehran Province.
- Acting Director, **Research Institute of Medicinal and Industrial Plants.**
- Member, **Faculty Recruitment Executive Committee**.
- Member, **Expert Committee for Talented Students**, Ministry of Science, Research and Technology.
- Promoted to **Associate Professor** with unanimous approval.
- Director of **International Students Affairs**, University of Ardakan.

Publications (2020–2026)

International Peer-Reviewed Journals (ISI & Scientific-Research Indexed)

1) Najm, M.R., Al Nooh, K.M., Al-Rubaie, O.A.F. Meftahizade, H. 2026. Evaluation of salt stress indices and morpho-physiological attributes to identify high-yielding, salt-tolerant guar (Cyamopsis tetragonoloba L.) genotypes. Sci Rep. https://doi.org/10.1038/s41598-026-49261-0.

2) Saleh, Y.M., Agha, B.S., Alalam, A.T.S. Meftahizade, H. 2026. The effects of seaweed extract and amino acid fertilizers on growth and productivity of two grape (Vitis vinifera L.) cultivars. Sci Rep. https://doi.org/10.1038/s41598-026-48750-6.

3**) Abed, A.Z., Aldarraji, M.H., Dargiri, S.A. Meftahizade, H.** 2026. Influence of nano-encapsulated peppermint essential oil and biocontrol fungus on root-knot nematode suppression and plant resilience in Guar (Cyamopsis tetragonoloba L.). Sci Rep. https://doi.org/10.1038/s41598-026-49422-1

4) Al-Abbasi, A.T., Sale, Y.M., Alalam, A.T.S. Meftahizade, H. 2026. Optimizing strawberry (Fragaria × ananassa cv. 'Ruby Gem') performance and fruit quality using sorbitol and boron foliar sprays. Sci Rep. https://doi.org/10.1038/s41598-026-48609-w

5**) Khurizadeh, S., Naderi, R., Kazemeini, S.A. Meftahizade, H**. 2026. Applying Exogenous Methyl Jasmonate and Chitosan Enhances the Antioxidant Enzyme Activity and Photosynthesis of Guar Varieties

Under Water Deficit Stress. J Plant Growth Regul 45, 3168–3188. https://doi.org/10.1007/s00344-026-12061-x

6) Agha, B.S., Ahmad, M.A., Jasim, E.AA. Meftahizade, H. 2026. Enhancing tuber quality, storage performance and yield response of potato to combined foliar application of zinc sulphate and boric acid. Sci Rep 16, 11927. https://doi.org/10.1038/s41598-026-46146-0

7) ShariffAl-Sheikh, W., S. A. A.Malik Al-Saadi, K. O.Qader, and H.Meftahizade. 2026. Evaluation of Salt-Tolerant Guar (Cyamopsis tetragonoloba L.) Genotypes Based on Physiological, Biochemical, and Yield-Related Traits. Legume Science8, no. 2: e70093. https://doi.org/10.1002/leg3.70093.

8) Al-Sheikh, W. Muhammed Shariff and Meftahizade, H. 2026. Mitigating Drought Stress in Physalis alkekengi: Synergistic Effects of Foliar Boron and Zinc on Photosynthesis and Metabolite Accumulation. *Journal of Medicinal plants and By-products*, (), -. doi: 10.22034/jmpb.2026.371603.2114

9**) Shariff Al-Sheikh, W. M. and Meftahizade, H.** 2026. Screening Guar (Cyamopsis tetragonoloba L.) Genotypes for Salt Tolerance using Physiological Indicators and Yield Performance. *Journal of Medicinal plants and By-products*, doi: 10.22034/jmpb.2026.371778.2120

10) Dawood, A. I., S. A.Waheeb, L. s. A.majeed, and H.Meftahizadeh. 2026. Improving Peach Fruit Yield and Quality Using Foliar Application of Nano Chelated Zinc and Seaweed Extract (Spirulina platensis): A Multivariate Analysis Approach." Food Science & Nutrition14, no. 5: e71838. https://doi.org/10.1002/fsn3.71838.

11)Tahmouzi, S., M.Heydari-Majd, H.Daliri, Meftahizade, H. 2026. Impacts of Plant-Derived Hydrocolloids on Technological Characteristics of Gluten-Free Bakery Products: A Comprehensive Review. Comprehensive Reviews in Food Science and Food Safety25, no. 1: e70339. https://doi.org/10.1111/1541-4337.70339

12) SAA Al-Saadi, KO Qader, HM Hasan, M Eskandari, H Meftahizade. 2025. Synergistic effects of melatonin and chitosan in alleviating drought stress in saffron:(Crocus sativus) insights into plant growth and biochemical responses. BMC Plant Biology 25 (1), 1-17.

13) Ziyad Shihab Ahmed, Aysar Mohammed Salim, Eelaf Taha Hussein Al-Dur, Angham Talal Mahmood Al-Chalabi, Marwan Abdullah Sanam, Soheila Aghaei Dargiri, Heidar Meftahizade. 2025. Optimizing micropropagation and microcorm induction in saffron (Crocus sativus L.) using PGRs (NAA and BAP) and elicitor salicylic acid. BMC Plant Biology 25 (1), 1-13.

14) Izadi, M Dehestani-Ardakani, H Meftahizadeh, J Gholamnezhad. 2025. Application of edible coatings based on gum of guar plant and essential oil of Shirazi thyme for improving quality of pomegranate arils cv.'Zagh'during storage life. ournal of food science and technology (Iran) 22 (165), 1-17.

15) F Fakhrzad, WM ShariffAl-Sheikh, MM Mohammed, H Meftahizadeh. 2025.Machine learning models for predicting morphological traits and optimizing genotype and planting date in roselle (Hibiscus Sabdariffa L.).Scientific Reports 15 (1), 29148.

16) WS Faizy, A Alsawaf, F Al-Zuhairi, ZA Mustafa, MA Sanam, H Meftahizade. 2025.Jasmonic Acid Enhances Pomegranate Resilience to Drought: Insights Into Leaf and Fruit Traits. Food Science & Nutrition 13 (8), e70695.

17) RA Ali AL-Qady, WW Ahmad, WS Faizy, MN Mustafa, B Yousefi, 2025.Unveiling the Synergistic Effects of Melatonin, Arginine, and Nano-Chelated Zn-Fe on Enhancing Fruit Quality in Apricot (Prunus armeniaca). Food Science & Nutrition 13 (7), e70559.

18) MH Aldarraji, HM Hasan, HT Ardekani, M Heydari-Majd, H Meftahizade, 2025. Cyamopsis tetragonoloba Gum-Based Active Coatings Incorporated with Pycnocycla bashagardiana Essential Oil for Reducing Postharvest Losses of Fresh Pistachio Fruits. Food Science & Nutrition 13 (7), e70388.

19) F Mirzaei, Z Nobakht, N Mosahebian, H Meftahizadeh, H Mahmoodian, 2024.Antimicrobial and anti-parasitic effect of six landraces of henna (Lawsonia inermis L.). ournal of Kerman University of Medical Sciences 32 (1), 1-6.

20) A Rezapour, M Dehestani-Ardakani, K Kamali, H Meftahizade, J Nasiri. 2024.In Vitro Optimization of Plant Growth Regulators and Ex Vitro Acclimatization of Various Substrates in Three Cultivars of Begonia rex Putz. Journal of Plant Growth Regulation, 1-26.

21) A Izadi, M Dehestani-Ardakani, H Meftahizadeh, J Gholamnezhad. 2024. Edible coatings based on guar gum and peppermint essential oil alter the quality enhancement of Zagh pomegranate arils during the postharvest supply chain. iomass Conversion and Biorefinery 15 (1), 243-254.

22) S Khurizadeh, R Naderi, H Meftahizadeh, S Hazrati, S Nicola. 2024.Foliar Application of Methyl Jasmonate and Chitosan Improve Growth, Yield, and Quality of Guar (Cyamopsis tetragonoloba L.) Under Water-Deficit Stress. Plants 13 (21), 3099.

23) AM Mozhgan Alinia , Seyed Abdolreza Kazemeini , Heidar Meftahizadeh. 2024.. Alleviating salinity stress in Cyamopsis tetragonoloba L. seedlings through foliar application of silicon or melatonin in arid and semi-desert environments. South African Journal of Botany 174, 347-359.

24) N Hemat, H Meftahizadeh, M Ghorbanpour, M Dehestani-Ardakani. 2024. Unveiling the potential role of gibberellic acid, melatonin and indole acetic acid on parthenocarpy, physiological traits and phytochemical responses in Hibiscus sabdariffa L. cientific Reports 14 (1), 23807.

25**) S Soltani-Gerdefaramarzi, M Hoseinollahi, H Meftahizadeh, F Bovand**. 2024.Differential responses of two local and commercial guar cultivars for nutrient uptake and yield components under drought and biochar application. Scientific Reports 14 (1), 23665.

26) A Irandegani, A Jafari, E Saboki, M Shirmardi, H Meftahizadeh. 2024.The Role of Pollen Source in Improving Fruit Quality and Yield of Date Palm cv. Piarom. Agriculturae Conspectus Scientificus 89 (1), 49-57.

27) M Hoseinollahi, SG Somayeh, A Azizian, H Meftahizadeh. 2024. Effect of drought stress and soil amendment on some morphophysiological traits of Guar (Cyamopsis tetragonoloba L.). ater Management in Agriculture 10 (2), 39-54.

28) A Rezapour, K Kamali, J Nasiri, H Meftahizadeh. 2024. Optimizing in vitro micropropagation of Begonia rex using plant growth regulators.Journal of Plant Process and Function 13 (59), 179-192.

29) M Jalili, H Meftahizade, A Golafshan, E Zamani, M Zamani. 2024. Green synthesized guar plant composites for wastewater remediation: a comprehensive review. Polymer Bulletin 81 (1), 247-273

30) Meftahizade, Ghorbanpour, Asareh. 2019. Comparison of morphological and phytochemical characteristics in guar (*Cyamopsis tetragonoloba* L.) landraces and cultivars under different sowing dates in an arid environment. Industrial crops and products. 140

31) Meftahizade, Ghorbanpour, Asareh. 2019. Changes in phenological attributes, yield and phytochemical compositions of guar (Cyamopsis tetragonoloba L.) landaraces under various irrigation regimes and planting dates. Scientia Horticulturae. 256

32) Meftahizade, Hatami 2020. Changes in agronomic characteristics and galactomannan content in twenty cluster bean genotypes of different origins affected by sowing dates. Acta Ecologica Sinica. 42 (1).

33) Besharati, Shirmardi, Meftahizade, Dehestani, Ghorbanpour. 2021. Changes in growth and quality performance of Roselle (Hibiscus sabdariffa L.) in response to soil amendments with hydrogel and compost under drought stress. South African Journal of Botany.

34) Meftahizade, Ebadi, Baath, Ghorbanpour. 2021. Variation of morphological and phytochemical traits in Roselle (Hibiscus sabdariffa L.) genotypes under different planting dates. Acta Ecologica Sinica.

35) Sanaei, Sadeginia, Meftahizade, Fatahi Ardakani, Ghorbanpour. 2021. Cadmium and lead differentially affect growth, physiology, and metal accumulation in guar (Cyamopsis tetragonoloba L.) genotypes. Environmental science and Pollution Research. 29 (2).

36) Ansari, Meftahizade, Eslami. 2021. Fabrication of multifunctional chitosan-Guar-Aloe Vera gel to promote wound healing. Chemical papers. 76 (2).

37) Rahmati Ahmad Abad, Meftahizade, Shirmardi, Ghorbanpour, Dehestani Ardakani. 2021. Intercropping improves yield and phytochemical attributes in guar (Cyamopsis tetragonoloba L.) and roselle (Hibiscus sabdariffa L.) plants under nitrogen application. South African Journal of Botany.

38) Keshavarz, Meftahizade, Fehrestai-sani, Toghraei. 2022. Measuring the supply chain performance of Guar (Cyamopsis tetragonoloba L.) as medicinal and industrial plant in Iran. Journal of agricultural science and technology.

39) Dehghani Soltani, Meftahizade, Barani, Rahdar,Hosseinikhah, Hatami, Ghorbanpour. 2021. Guar (Cyamopsis tetragonoloba L.) plant gum: From biological applications to advanced nanomedicine. International Journal of Biological Macromolecules. 193.

40) Satari, Dehestani-ardakani, Shirmardi, Hatami, Meftahizade, Ghorbanpour. 2022. Role of night interruption lighting and NLK application on growth and flowering of Phalaenopsis. South African Journal of Botany.150.

41) M. Fatahi Bafghi, S. Salary, F. Mirzaei, H. Mahmoodian, H. Meftahizade and R. Zareshahi.2022. Antibacterial and anti-trichomunas characteristics of local landraces of Lawsonia inermis L. BMC Complementary Medicine and Therapies.

42) Meftahizade, Gurjinder, Rainder, Falakian, Hatami. 2022. Melatonin-Mediated Alleviation of Soil Salinity Stress by Modulation of Redox Reactions and Phytochemical Status in Guar (Cyamopsis tetragonoloba L.). Journal of Plant growth regulation.

43) Ansari, Meftahizade and Eslami. 2022. Physical and antibacterial properties of Chitosan-guar-peppermint gel for improving wound healing. Polymer Bulletin.

44) Dehestani Ardakani, Gholamnejad, Alizadeh, Meftahizade, Ghorbanpour. 2022. Salicylic acid and herbal extracts prolong vase life and improve quality of carnation (Dianthus caryophyllus L.) flower. South African Journal of Botany.

45) Dolat Abadi, Meftahziade, Ahmadzade, Abbasi, Falakian, Ghorbanpour. 2022. Efficiency of modified plant guar gum as aid coagulant for removal of diazinon from aqueous solution: optimization by response surface methodology. Chemical papers.

46) Hosseini, Meftahziade, Ghorbanpour, Gholamnejad, Zareshahi. 2021. Influence of harvesting dates and genotypes on secondary metabolites status and antioxidant activity in Lawsonia inermis L. (Henna). Acta Eqcoligical Silica.

47) Jalili, Meftahizade, Golafshan, Zamani, Behzadi, Ghorbanpour. 2022. Green synthesized guar plant composites for wastewater remediation: a comprehensive review. Polymer Bulletin.

48) Tahmoozi, Eishi, Meftahizade, Mahmoudzadeh, Alizadeh, Mollakhalili, Hatami.2022. Application of guar (Cyamopsis tetragonoloba L.) gum in food technologies: A review of properties and mechanisms of action. Food Science and Nutrition.

Scientific-Research Publications (Iranian Journals)

Ebrahimi, R., Rastgar, A., & Meftahizadeh, H. (2019). Effect of guar gum edible coating and aloe vera gel on postharvest quality of mango (*Mangifera indica*). *Journal of Fruit Science Research*, 4(2).

Yazdani-Biuki, R., Rahimian, M., Ranjbar, M., Rad, A., Beirami, H., & Meftahizadeh, H. (2020). Effects of irrigation water salinity on quantitative and qualitative yield and water use efficiency of Damask rose under pot conditions. *Agricultural Water Research*, 34.

Abdolsamadi, M., Meftahizadeh, H., Vazifeh-Shenas, M., Soltanipour, M., & Ghorbanpour, M. (2020). Comparison of essential oil yield and composition of *Teucrium polium* at different phenological stages. *Medicinal Plants Journal*, 75.

Meftahizadeh, H., & Asareh, M. (2021). Effects of plant density and nitrogen on phenological traits, photosynthetic capacity, and quality characteristics of local guar (*Cyamopsis tetragonoloba* L.) populations. *Iranian Journal of Horticultural Science*, 52(2).

Meftahizadeh, H., & Rahmati-Ahmadabad, S. (2021). Evaluation of germination indices and seedling growth characteristics of guar genotypes under salinity stress. *Iranian Journal of Seed Science and Technology*, 4(2).

Meftahizadeh, H. (2021). Evaluation of yield and phytochemical traits of ten local ecotypes and a commercial variety of roselle (*Hibiscus sabdariffa* L.) under different planting dates. *Iranian Journal of Horticultural Science*, 4(3).

Meftahizadeh, H., Pourghalandari, B., & Kodori, M. (2022). Evaluation of yield and phytochemical traits of Damask rose (*Rosa damascena* Mill.) under manure and compost treatments. *Plant Processes and Function*, 47(11).

Ghiath, M., Shirmardi, H., Meftahizadeh, H., & Dehestani-Ardakani, M. (2022). Effects of biochar and hydrogel on morphophysiological and biochemical traits of sage (*Salvia officinalis* L.) under drought stress. *Plant Production Journal*.

Dehghani-Ahmadabad, S., Meftahizadeh, H., Siyahati, S., & Shirmardi, H. (2022). Phytoremediation potential of petunia, verbena, and lavender under steel industry wastewater irrigation (Case study: Chadormalu Steel). *Journal of Natural Environment*, 75(2).

Shourideh, M., Meftahizadeh, H., Heydarzadeh, H., & Yousefi, A. (2023). Evaluation of yield-related traits of guar genotypes under rainfed and supplemental irrigation conditions. *Agronomy Journal*.

Meftahizadeh, H., Hamidoghli, Y., Asareh, M., & Javanmard-Dakheli, M. (2018). Effects of planting date and irrigation regimes on phytochemical properties of guar genotypes (*Cyamopsis tetragonoloba* L.). *Iranian Journal of Medicinal and Aromatic Plants Research*, 34(4).

Meftahizadeh, H., & Asareh, M. (2019). Comparison of local guar ecotypes with commercial varieties in terms of yield and quality traits under different cropping seasons. *Iranian Journal of Medicinal and Aromatic Plants Research*.

Meftahizadeh, H., & Heydari, M. (2019). Microbial contamination assessment of selected dried medicinal plants in herbal shops of Yazd. *Applied Biology Journal*.

Shourideh, M., Meftahizadeh, H., Heydarzadeh, H., & Yousefi, A. (2023). Performance evaluation of guar genotypes under different irrigation conditions. *Agronomy Research*.

Mohaddesi, A., Shirmardi, H., Meftahizadeh, H., & Gholamnejad, J. (2023). Effects of biochar and vermicompost on morphophysiological traits of evening primrose (*Oenothera biennis*) under drought stress. *Sustainable Agriculture and Development*.

Ghaderi, M., Shirmardi, H., Jafari, A., & Meftahizadeh, H. (2023). Effects of organic and chemical fertilizers and amino acid foliar application on growth and yield of pistachio (*Pistacia vera* L. 'Akbari'). *Iranian Journal of Horticultural Science*.

Conference Presentations (National Conferences)

Yazdani, R., Rahimian, M., Rad, A., Beirami, H., Ranjbar, M., & Meftahizadeh, H. (2019). *Damask rose (Rosa damascena Mill.) production in Iran: Water requirement, salinity tolerance, and yield*. 8th National Congress on Medicinal Plants, Iran.

Meftahizadeh, H., Pourghalandar, B., Kodori, M., & Yazdani, R. (2019). *Investigation of morphological and yield characteristics of Damask rose (Rosa damascena Mill.) under manure and compost treatments*. 8th National Congress on Medicinal Plants, Iran.

Meftahizadeh, H., Zarei, M., & Zarabi, A. (2019). *Ethnobotanical study of medicinal plants in Meybod County (Yazd Province)*. 8th National Congress on Medicinal Plants, Iran.

Ghiath, M., Shirmardi, H., Meftahizadeh, H., & Dehestani, M. (2021). *Effect of municipal waste compost on growth indices of sage (Salvia officinalis L.) under drought stress*. 17th Iranian Soil Science Congress & 4th National Conference on Farm Water Management, Iran.

Ghiath, M., Shirmardi, H., Meftahizadeh, H., & Dehestani, M. (2021). *Effect of municipal waste compost on water relations and phytochemical characteristics of sage under drought stress*. 17th Iranian Soil Science Congress & 4th National Conference on Farm Water Management, Iran.

Haghjoo, M., Roustaei-Sadrabadi, A., Meftahizadeh, H., & Khajehmehrizi, A. (2021). *Synthesis of a novel natural thickener based on guar gum for textile printing*. 1st National Conference on Community-Based Research in Agriculture, Natural Resources, and Environment, Iran.

Research & Technological Projects

Meftahizadeh, H. (2018). *Production of seedlings and cuttings of medicinal plants for application in green spaces of Bafgh Iron Ore Company*. **Principal Investigator**.

Meftahizadeh, H. (2018). *Development and promotion of guar cultivation in underprivileged regions of Sistan and Baluchestan Province*. **Principal Investigator**.

Meftahizadeh, H. (2018). *Application of medicinal and industrial plants in green spaces to reduce industrial pollution (Jahanabad Industrial Town, Meybod)*. **Principal Investigator**.

Meftahizadeh, H. (2018). *Establishment of a collection of native desert medicinal and industrial plants for education, research, and technology transfer*. **Principal Investigator**.

Meftahizadeh, H. (2019). *Development of medicinal and industrial plant cultivation for rural employment generation (Qaleh Ganj County)*. **Principal Investigator**.

Yazdani-Biuki, R., Rahimian, M., Rad, A., Beirami, H., Ranjbar, M., & Meftahizadeh, H. (2018). *Effects of irrigation water salinity on evapotranspiration and water requirement of Damask rose (Rosa damascena)*. **Co-Investigator**.

Meftahizadeh, H., Rahayi-Fard, A., & Ghorbanpour, M. (2020). *Development of a separation device for calyx removal in roselle (Hibiscus sabdariffa) processing*. **Principal Investigator**.

Meftahizadeh, H. (2020). *Commercial production of guar meal as a substitute for soybean meal in livestock and poultry feed*. **Principal Investigator**.

Meftahizadeh, H., Roustaei-Sadrabad, A. (2019). *Design and development of low-water-demand medicinal and industrial plants for green spaces in Ardakan Industrial Town*. **Principal Investigator**.

Meftahizadeh, H. (2021). *Improving saffron production efficiency and implementation of cultivation development strategies (Bafgh County, Yazd Province)*. **Principal Investigator**.

Meftahizadeh, H. (2021). *Commercial production of guar meal (soybean substitute) and stabilizer for food industries using guar products*. **Principal Investigator / Client Representative**.

Meftahizadeh, H., Shourideh, M., & Yousefi, A. (2022). *Evaluation of agronomic traits of guar (Cyamopsis tetragonolobus) under rainfed and supplemental irrigation conditions in North Khorasan Province*. **Co-Investigator**.

Meftahizadeh, H., & Soltani, M. (2025). *Evaluation of water stress and different mulches on the performance of medicinal plants (Vitex and madder) in industrial green spaces*. **Principal Investigator**.

Meftahizadeh, H. (2025). *Meta-analysis of studies on plane tree (Platanus orientalis) decline in Tehran, aiming to identify causes and propose mitigation strategies*. **Principal Investigator**.

Books

Meftahizadeh, H. (2021). *Production and Processing of Medicinal and Industrial Plants in Arid Regions*. Ardakan University Press.

Meftahizadeh, H., Kazemini, S., & Alinia, M. (2026). *Guar Cultivation and Processing: From Farm to Market*. Shiraz University Press.

Patents (Approved by the Ministry of Science, Research and Technology)

Meftahizadeh, H. (2020). *Guar seed dehulling machine equipped with nano-filter and needle-blade rollers*. **Inventor & Patent Holder**.

Meftahizadeh, H. (2022). *Portable roselle flower separator using mechanical force applied to the calyx*. **Inventor & Patent Holder**.

Technology Development

Meftahizadeh, H. (2023). *Development and commercialization of guar gum production for the first time at the national level*.

Graduate Student Supervision (M.Sc. & Ph.D.)

- Evaluation of planting arrangement and nitrogen application on quantitative and qualitative traits of guar and roselle – Zahra Rahmati Ahmadabad
- Effect of harvest time on chemical characteristics of henna local ecotypes – Zahra Hosseini Malaei
- Effects of lead and cadmium levels on quantitative and qualitative traits of evening primrose – Farnaz Kamali Dolatabadi
- Evaluation of heavy metal stress on quantitative and qualitative traits of guar – Samaneh Sanaei
- Use of treated wastewater from Ardakan Steel Company for irrigation of green space plants – Sima Dehghani Ahmadabadi
- Economic analysis of production and marketing of medicinal plant processing industries (Case study: Henna, Qaleh Ganj, Kerman) – Fatemeh Khorsand
- Comparative economic analysis of medicinal plant industries (Case study: Guar and sesame, Qaleh Ganj, Kerman) – Fahimeh Rashidi
- Effects of biochar, hydrogel, and compost on growth traits of sage under drought stress – Shayesteh Ghiath Nodooshan
- Economic analysis of production and marketing of medicinal plants (Case study: Roselle, Qaleh Ganj) – Zahra Falahati Marvast
- Effects of compost and hydrogel on physiological and morphological traits of roselle under drought stress – Jalaleddin Besharati
- Interaction effects of phosphorus, seaweed extract, and humic acid on phytochemical traits of roselle – Mohammad Hassan Kargar

- Combined effects of salinity and drought stress on germination traits of roselle ecotypes – Pegah Azhdari
- Effects of mucilage (Cordia) and guar gum concentrations on calyx quality of roselle – Yasaman Ghanbarinejad
- Ethnobotanical study of medicinal and aromatic plants in Noorabad Mamasani region – Zahra Arabi
- Evaluation of stabilizing properties of tamarind gum and carboxymethyl guar gum as natural mulch – Shakila Abshin
- Effects of gibberellic acid, melatonin, and indole-3-acetic acid on parthenocarpy induction in roselle – Neda Hemmat
- Effects of plant gums (Ferula and guar) on postharvest quality of fresh pistachio – Mahin Fouladi
- Application of natural biopolymers (guar gum and xanthan gum) in sand dune stabilization – Fatemeh Ashrafzadeh
- Effects of guar meal and multi-enzyme supplementation on performance of growing quails – Abozar Rasaei
- Effects of salinity and drought stress on qualitative and yield traits of evening primrose – Fatemeh Shaker.

Teaching Experience

Courses Taught in Medicinal and Aromatic Plants (B.Sc., M.Sc., Ph.D.)

- Phytochemistry and Pharmacognosy
- Advanced Biochemistry
- Principles of Horticultural Plant Breeding
- Plant Growth Regulators
- Methods of Extraction and Identification of Bioactive Compounds in Medicinal Plants
- Marketing of Medicinal and Industrial Plants
- Identification and Introduction of Native Medicinal Plants of Iran
- Production and Utilization of Medicinal Plants
- Physiology of Medicinal Plants
- Breeding of Medicinal Plants
- Fundamentals of Medicinal Plants

Language Skills

- Persian (Native)
- English (Full Professional Proficiency)
- Arabic (Professional Working Proficiency)

Laboratory Skills & Research Interests

- Tissue culture and cell suspension culture of medicinal plants
- Extraction, identification, and analysis of bioactive compounds in medicinal plants
- Extraction techniques of plant-derived gums and hydrocolloids
- Application of plant-based biopolymers in drilling, food, and cosmetic industries

- Cropping pattern optimization toward low water-demand plants, particularly medicinal and industrial species
- Cultivation of gum-producing and industrial (dye-yielding) plants and extraction of valuable compounds for industrial applications
- Application of medicinal and industrial plants in green spaces, particularly in arid and semi-arid regions.