

Curriculum Vitae

Personal Data

Name: Fatemeh Zarinkamar

Languages: English as working language and fluent in French and Spanish.

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Academic Qualifications:

B.Sc. in Biology, University of Isfahan-Iran, 1987

Ph.D in Plant Biology (Plant Anatomy) Buenos Aires State University (U.B.A), Buenos Aires-Argentina, 1994.

Cours du Microscopie Electronique appliquee a l'etude des vegetaux (M.E.T&M.E.S)
Centre du Microscopie Electronique Bugnon & Laussane University, Lausanne-Switzerland, 1998.

Professional Experiences:

Researcher, Research Institute of Forests and Rangelands (RIFR) and Iranian Central Herbarium , Department of Plant Biology, Tehran, 1994 – 1996.

Invitee lecturer, Tarbiat Modaress University of Tehran, 1994 – 1996.

Scientific Researcher in laboratory of plant physiology and biochemistry, Department of Botany and Plant Biology, University of Geneva, Switzerland, 1997 - 1999.

Lecturer and Head of Laboratory of plant Anatomy, Research Institute of Forests and Rangelands, Tehran, Iran 1999 – 2001.

Visitor researcher in School of Biological and Biomedical Sciences, University of Durham, UK, 2002-2004.

Associate Professor, Tarbiat Modaress University of Tehran, 2005-.

Main Research Activities:

Plant development and anatomical studies of various Xerophytes and Halophytes plants.

Plant adaptation and physiological stress, phytoremediation, Anatomical- structural studies of medicinal plants.

Phytochemical study on various species which produce essential oil.

Comparative studies on main and important anatomical-structural characters in Monocotyledones as well as Cyperaceae, Gramineae, Iridaceae, Juncaceae, Liliaceae, Orchidaceae; Dicotyledones such as Compositae, Caryophyllaceae, Papilionaceae, Chenopodiaceae, Labiateae, Caryophyllaceae, papilionaceae, Chenopodiaceae, Labiateae, Rosaceae, Boraginaceae, Rhamnaceae, Anacardiaceae, Cruciferae, Malvaceae, Umbelliferae, Zygophyllaceae, etc.

Anatomy – ecology studies of rare and endemic flora in some environmentally protected area of Iran. This study aims to develop a database of more than 500 species and an Anatomical–Ecological Atlas of rare and endemic flora of Iran.

Publications:

- Books; Foliar anatomy of Iranian plants, vol. 3. Endemic plant species in Iran, Noorbakhsh Press, Tehran, Iran, 1-448, 2019
- Anatomy – Ecology Studies of Astragalus Species (producers of gum tragagantin) in Iran, published by Research Institute of Forests and Rangelands, Teheran, Iran, 1997.
- New vision on stomatal theory, published by Sepehr Naghsh, Teheran, Iran, 1-112, 2006.
- Iranian Atlas of foliar anatomy vol. 1. Noorbakhsh Press, Tehran, Iran, 1-448, 2008
- Iranian Atlas of foliar anatomy vol. 2 (petiole) .Noorbakhsh Press, Tehran, Iran, 1-448, 2009

Papers;

- Isoleucine treatment of seeds increased the content of 4-hydroxyisoleucine and affected the anatomy properties of *Trigonella persica* Boiss. At different developmental stages, *Biologia*, 2022.
- Eco physiological, anatomical, and apigenin changes due to uptake and accumulation of cadmium in *Matricaria chamomilla* L. flowers, *ENVIRONMENTAL SCIENCE AND POLLUTION RESEARCH*, 2021.

- Structural and quantitative changes of starch in seed of *Trigonella persica* during germination, *INTERNATIONAL JOURNAL OF BIOLOGICAL MACROMOLECULES*, 2020.
- Biological investigation of *Lilium ledebourii* in Iran, *Rostaniha*, 2020.
- Salicylic Acid Induces Exudation of Crocin and Phenolic in Saffron Suspension-Cultured Cells, *PLANTS*, 2020.
- Ultraviolet B radiation induces physiological, biochemical, and structural changes in *Viola odorata*, *VEGETOS*, 2020.
- Ultraviolet-b induced changes in *Mentha aquatica* (a medicinal plant) at early and late vegetative growth stages Investigation at molecular and genetic levels, *INDUSTRIAL CROPS AND PRODUCTS*, 2020.
- Induction of phenolic and flavonoid compounds in leaves of saffron (*Crocus sativus* L.) by salicylic acid, *SCIENTIA HORTICULTURAE*, 2019.
- Isolation, qualitative and quantitative evaluation of galactomannan during germination of *Trigonella persica* (Fabaceae) seed, *INTERNATIONAL JOURNAL OF BIOLOGICAL MACROMOLECULES*, 2019.
- Strong effect of recovery period between hypoxia events on roots of chickpea (*Cicer arietinum* L), *Rhizosphere*, 2019.
- Influence of thidiazuron on callus induction and Crocin production in corm and style explants of *Crocus sativus* L, *ACTA PHYSIOLOGIAE PLANTARUM*, 2018.
- Manganese-induced changes in glandular trichome density and essential oils production of *Mentha aquatica* L. at different growth stages, *JOURNAL OF TRACE ELEMENTS IN MEDICINE AND BIOLOGY*, 2018.
- Changes in primary and secondary metabolites of *Mentha aquatica* L. exposed to different concentrations of manganese, *ENVIRONMENTAL SCIENCE AND POLLUTION RESEARCH*, 2018.
- Manganese modulates the physiological and biochemical responses of *Mentha aquatica* L. to ultraviolet radiation, *JOURNAL OF TRACE ELEMENTS IN MEDICINE AND BIOLOGY*, 2018.
- Physiological biochemical and molecular responses of *Mentha aquatica* L. to manganese, *ANT PHYSIOLOGY AND BIOCHEMISTRY*, 2017.

- Magnesium and manganese affect photosynthesis, essential oil composition and phenolic compounds of *Tanacetum parthenium*, *Plant Physiology and Biochemistry* 207-217: 2017.
- Magnesium and manganese interactively modulate parthenolide accumulation and the antioxidant defense system in the leaves of *Tanacetum parthenium*, *Journal of Plant Physiology* 202 10–20:2016.
- Glandular trichomes on the leaves of *Trigonella foenum-graecum*: Development, Structure and Histochemistry, *Pharmacia Lettre* , 8 (7): 2016.
- Morphology and Histochemistry of the Glandular Trichomes of *Trigonella foenum- graecum* (Fabaceae), *International Journal of Innovative Science, Engineering & Technology*, 3(1): 2016.
- Terminology of venation pattern in *Viola tricolor* Leaf architectures, *Int. J. Adv. Res. Biol. Sci.* 3(5): 48-61: 2016.
- Effects of Salicylic Acid on Carotenoids and Antioxidant Activity of Saffron (*Crocus sativus* L.), *Applied food biotechnology*, 2(4):33-37: 2015.
- Exogenously Applied Manganese Alleviates Cadmium Toxicity in Anatomy of *Matricaria chamomilla* Plants, *Acta Velit* Vol: 1 Issue: 4, 2015.
- Correlation between PAL, medicarpin, phenol and flavonoid content in *Medicago sativa* L. at different growth stages, *Journal: Journal of Advances in Chemistry*, Vol. 10, No. 7, 2014
- Manganese treatment effects on terpene compounds of *Cuminum cyminum* flowers, *Industrial Crops and Products*, 65– 70: 2014.
- Effect of Diesel Fuel Contaminated Soil on the Germination and the Growth of *Festuca arundinacea*, *Research Journal of Chemical and Environmental Sciences*, Volume 1 Issue 2 (): 37-41: 2013.
- Exogenously applied calcium alleviates cadmium toxicity in *Matricaria chamomilla*, 1181-9, Springer, 2012.
- Determination of peroxidase activity, total phenolic and flavonoid compounds due to Lead toxicity in *Medicago sativa* L. *Advances in Environmental Biology*, 6(8): 2357-2364, 2012.

- Morphological And Anatomical Responses Of *Matricaria Chamomilla* Plants To Cadmium And Calcium, *Advances in Environmental Biology*, 6(5): 1603-1609, 2012.
- Quantification of crocins, picrocrocin and safranal components of saffron (*Crocus sativus* L.) *Iranian journal of plant biology* (3), 423-429, 2012.
- The effect of different Pb and Cd concentrations on seed germination and seedling growth of *Matricaria chamomilla*, *Advances in Environmental Biology*, 6(7): 1940-1943, 2012.
- Study of Environment Temperature Effect on the Antibacterial Activity of Water Extract of Different Organs of *Viola Odorata* in the Different Stages of Growth, *J Babol Univ Med Sci*; 14(2); 16-21, 2012.
- Different expression of limonene synthase gene in organs and developmental stages of cumin (*Cuminum cyminum* L.) *Iran. J. Med. Aromat. Plants* 27, 495-508
- Effect of cold stress on the anatomy and morphology of the tolerant and sensitive cultivars of rice during germination *Journal of cell & tissue* 2 (3), 235-244, 2011.
- The study of lead uptake and accumulation by *Matricaria chamomilla* in various growth stages, *Iranian journal of plant biology*, 3 (9), 53-62, 2011.
- Foliar anatomy and micromorphology of *Festuca* L. and its taxonomic applications *Taxonomy and Biosystematics*, 3(8): 55-63, 2011.
- Effects of altitude on anatomy and concentration of crocin, picrocrocin and safranal in *crocus sativa* L. *Australian journal of crop science* 5(7): 831-838, 2011.
- Salts effect on anatomy and deformity of pistacia vera Nut, *Journal of Agricultural Scirnce and Technology*, A (1): 599-607, 2011.
- Limonene synthase gene expression under different concentrations of manganese in *Cuminum cyminum* L. *Journal of Medicinal Plants Research* Vol. 5, 2011.
- Physiological responses of two rice (*oryza sativa* L.) genotypes to chilling stress at seedling stage, *African Journal of Biotechnology*, 10(39): 7617- 7621, 2011.
- Analysis of Vascular Development in the hydra Sterol, Biosynthetic Mutants of *Arabidopsis*, *PLoS ONE* 5(8): 2010.

- Effects of altitude on anatomy of *Plantago major* and *Plantago lanceolata*, Iranian journal of biology 23 (4), 532-540
- The effect of cold stress on the morphology and physiology of two rice varieties in seedling stage, journal of agriculture plant, 3: 50-66, 2010.
- Comparative anatomy of two varieties of *Pistacia vera* and effect of salinity and mechanical wounding on deformity of nut, Pajouhesh-va-sazandegi vol. 5(2), 2009.
- Taxonomic value of leaf anatomy in Iranian fine lived *Festuca*, Rostaniha (Botanical Journal of Iran) Vol. 9(2), 166-177, 2009.
- Anatomical studies of some *Avena* species in Iran, Rostaniha (Botanical Journal of Iran) Vol. 8(2), 97-106, 2008.
- Comparison of calcicule and calcifuge plants, Iranian Journal of Botany, 279 – 287, 2000.
- The structure and ultrastructure of secretary gum ducts in two *Astragalus* species, Iranian Journal of Botany, 117 – 125, 1996. Comparative foliar anatomy of Xerophyte species from Iran, Iranian Journal of Botany, RIFR, 153 – 168, 1993.
- Foliar anatomy of Chenopodiaceae family and xerophytes adaptation Iranian Journal of Botany, 11(2):169-175, 2006.
- Comparative anatomy of the three halophyte species , *Salsola dendroides*, *Alhagi persarum*, *Aeluropus lagopoides*, Pajouhesh-va-sazandegi, 50-66 Vol. 18(1), 2005.
- Foliar anatomical studies in the umbeliferae from Arasbaran, Iran, Iranian Journal of Botany, 2004.
- The plant traits that drive ecosystems: Evidence from three continents, Journal of vegetation science 15: 295-304, 2004.
- Soil seed banks in the Arasbaran Protected area of Iran and their significance for conservation management, Biological conservation 109(425-431) 2003.
- Foliar anatomy of *Carex* in Arasbaran, NW Iran, Iranian Journal of Botany, 261-270, 2002.

- Foliar anatomy of the Caryophyllaceae family in Arasbaran, NW Iran, Iranian Journal of Botany, 93-102, 2001.
- Seed size, shape and persistence in the soil in Iranian flora, Seed Science Research 11, 345-355, 2001.
- The effect of salinity on anatomical structure and alkaloid production in pomegranate, Rostaniha (Botanical Journal of Iran), Vol. 6(2), 97-106, 2005.
- Density, Size and Distribution of Stomata in Different Monocotyledons, Pakistan Journal of Biological Sciences 9(9): 1650-1659, 2006.
- Anatomy-taxonomy of the genus Ziziphus in Iran Iranian Journal of Botany, 12(1):36-41, 2006.
- Anatomical characteristics of five Artemisia species in the north of Iran, Pajouhesh-va-sazandegi, No, 70, 79-88, 2006.
- Stomatal observation in Dicotyledons, Biological Sciences 10(2): 199-219, 2007.
- Different types of foliar trichomes in the family Boraginaceae, memorial Dedicated to the 100th Birthday of Rechinger, Vol. 7, 103-111, 2006.
- Study of foliar application of salicylic acid on some biochemical properties of two canola cultivars (Brassica napus L.) under cold stress condition, Iranian Journal of Agricultural
- Foliar anatomical studies in the Umbelliferae from Arasbaran, Iran. J. Bot 10, 103-117, 2004
- Foliar anatomical of the Caryophyllaceae family in Arasbaran, Iran. J. Bot 10, 103-117, 2004
- Salt's Effect on Anatomy and Deformity of Pistacia vera Nut,
- Effect of different concentration of lead on anatomical structure of Matricaria chamomilla L. in different development stages, Environmental stress in crop sciences, 3 (2), 139-149, 2010.
- Anatomical studies of some Avena species in Iran, Rostaniha 8 (2), 87-88, 2007.

- Different types of foliar trichomes in the family of Boraginaceae, Rostaniha 7 (226), 103-110, 2006
- Foliar anatomy of Chenopodiaceae family and xerophytes adaptation Iran. J. Bot 11, 175-183, 2006

Confrences and Presentations;

- the Effect of Pb on Leaf of Matricaria Chamomilla in Vegetative and Reproductive Stages, "Resilience of agricultural systems against crisis", Tropentag, September 19 - 21, Göttingen 2012.
- A role for sterols in vascular differentiation in Arabidopsis, SEB Main Meeting, Prague 2010.
- Study of Inflorescence Development under Lead Toxicity in Matricaria chamomilla, International Conference on Environment, Energy and Biotechnology, IPCBEE vol.33, IACSIT Press, Singapore 2012.
- Changes in amino acids profile in *Oryza sativa* seedling in response to chilling., Abiotic Stress Tolerance, CBB, 24–27, Szeged, Hungary 2011.
- Effect of salinity on anatomy and deformity of the *Pistacia vera* nut, International conference of plant abiotic stress tolerance, 8-11 february , Vienna, Austria 2009.
- Anatomical – Ecological studies of rare species in environmentally protected area in Iran, session 49 (developmental and structural session) of annual conference of Botanic Society of America “Botany 2001, plants and people” Albuquerque, New Mexico, USA 2001.
- Effect of lead toxicity on pollen grains in Matricaria chamomilla, International Conference on Bioscience, Biochemistry and Bioinformatics
- The effect of salinity on growth , minerals contents and alkaloid production in punica granatum, biological conference, university of Uromie, 2003.
- Aplication of biosystematic to analysis species of Ziziphus in Iran, biological conference, University of Ferdosi (Mashhad), 2004.
- Foliar anatomy of Gladiolus segetum and Iris acutiloba (Iridaceae), 13th Iranian Biology Conference and the First International Conference of Biology, Guilan University, Rasht, Iran, 2005.

- Different type of foliar trichome in Boraginaceae family, 14 national & 2 International Conference of Biology Tarbiat Modares University, Tehran, Iran 2006.
- An investigation on the morphology-anatomy of salvia genus in Iran, 14 national & 2 International Conference of Biology Tarbiat Modares University, Tehran, Iran 2006.
- Foliar anatomy of *Avena* (Poaceae) in Iran, 14 national & 2 International Conference of Biology Tarbiat Modares University, Tehran, Iran 2006.
- Anatomical study of *Bromus* (Poaceae) species of Iran, 14 national & 2 International Conference of Biology Tarbiat Modares University, Tehran, Iran 2006.
- Taxonomic study of *Ziziphus* genus in Iran, 14 national & 2 International Conference of Biology Tarbiat Modares University, Tehran, Iran 2006.
- The effect of salinity and mechanical wounding on deformity of *pistachio* nut 14 national & 2 International Conference of Biology Tarbiat Modares University, Tehran, Iran, 2006.
- Comparative leaf anatomy of two species *Festuca* in Iran, 1st National plant taxonomy conference of Iran Tehran, 2007.
- The antibacterial activity of *plantago* species against pathogenic bacteria, 9 national microbiology conference of Iran, Kerman, 2007.