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Research Interests: Agroecology, Sustainable Agriculture, Organic Agriculture, Environmental stresses, Seed Science, Medicinal Plants, Saffron Cultivation

M. Sc. Thesis:
Effects of biofertilizers and chemical fertilizers on quantity and quality characterizes of Chamomile (*Matricaria chamomilla*) as a medicinal plant.

Ph. D Thesis:
Application of RothC model to predict carbon sequestration and study the effect of climate change on carbon budget of the natural vegetation of Hossein Abad- Sarbisheh in Southern Khorasan province.

Research works:

A. Books

1. Ahmadian, A., Arazmjoo, E., **Fallahi, H.R.** 2014. Chamomile: Industrial Profile. Torbat-e Heydarieh University Press. Translation. [In Persian].
2. Behdani, M.A., **Fallahi, H.R.**, Aghhavani-Shajari, M. 2015. Future Crops. University of Birjand Press. Translation. [In Persian].
3. **Fallahi, H.R.**, Rezvani-Moghaddam, P., Behdani, M.A., Aghhavani-Shajari, M., Jahedi-pour, S., Yari, A. 2015. Principals of Carbon Sequestration. Jahad-e Daneshgahi Publication. [In Persian].
4. Behdani, M.A., **Fallahi, H.R.** 2016. Saffron: Technical Knowledge Based on Research Approaches. University of Birjand Press. [In Persian].
5. Behdani, M.A., **Fallahi, H.R.** 2018. Technical Knowledge of Saffron Production. Haft Rang Press. [In Persian].
6. Koocheki, A., **Fallahi, H.R.,** Jami-Al-Ahmadi, M. 2020. Saffron water requirements (pp: 67-92). In: Saffron: Science, Technology and Health (Edited by: Koocheki, A., Khajeh-Hosseini, M). Elsevier.
7. **Fallahi, H.R.,** Behdani, M.A., Aghhavani-Shajari, M. 2023. Food and Nutrition Ecology. In: Dryland Agroecology, First Part: Food Ecology (Eds: Koocheki, A., Nassiri Mahallati, M., Khorramdel, S., Khajeh-Hossini, M.). Chapter 9. Pp: 185-208. Ferdowsi University of Mashhad Press. (In Persian).
8. Aghhavani-Shajari, M., **Fallahi, H.R**. 2023. Carbon Sequestration in Agroecosystems. In: Dryland Agroecology, Third Part: Eco-friendly Strategies (Eds: Koocheki, A., Nassiri Mahallati, M., Khorramdel, S., Khajeh-Hossini, M.). Chapter 49. Pp: 1336-1385. Ferdowsi University of Mashhad Press. (In Persian).

B. Articles

B-1. Journal articles

1. **Fallahi, H.R.,** Koocheki, A. and P. Rezvani Moghaddam. 2008. Investigation the effect of organic fertilizers on quantity index and the amount of essential oil and chamazulene in chamomile (*Matricaria recutita*). Journal of Agriculture Research. 8(1): 157-168. [In Persian with English Summary].
2. **Fallahi, H.R.,** Ebadi, M.T. and R. Ghorbani. 2008. The effects of salinity and drought stresses on germination and seedling growth of clary (*Salvia sclarea*). Environmental Stresses in Agricultural Sciences. 1(1): 57-67. [In Persian with English Summary].
3. **Fallahi, H.R.,** Koocheki, A. and P. Rezvani Moghaddam. 2009. Effects of biofertilizers on quantitative and qualitative yield of chamomile (*Matricaria recutita*) as a medicinal plant. Iranian Journal of Field Crop Research. 7(1): 127-135. [In Persian with English Summary].
4. Hashemi, M., Jamshidi, A., Hedayati, M., **Fallahi**.H.R. 2009. Antibacterial effects of some medicinal plants on isolated salmonella from eggs consumed in Mashhad. Attachment of Journal of Veterinary, Islamic Azad University of Tabriz. 3(2): 177-179. [In Persian with English Summary].
5. **Fallahi, H.R.,** Ebadi, M.T., Rezvani Moghaddam, P., Hedayati, M. and S. Tarighi. 2010. Evaluation of essential oil of six medicinal plants on Controlling Salmonella Bacteria in Comparison with Streptomycin. Iranian Veterinary Journal. 6(1): 25-33. [In Persian with English Summary].
6. Yazdani-Biuki, R., Rezvani-Moghaddam, P., Koocheki, A., Amiri, M.B., **Fallahi**, H.R. and R. Deyhim-Fard. 2010. Effects of seed nourished by different levels of nitrogen, biofertilizers and drought stress on germination indices and seedling growth of wheat (*Tritium aestivum*) cv. Sayonz. Journal of Agroecology. 2(2): 266-276. [In Persian with English Summary].
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8. **Fallahi, H.R.,** Khajeh-Hosseini, M. 2011 Effects of applying various levels of nitrogen on parent plants on the resistance to salinity stress in achieved seeds in *Triticum aestivum* L. cv. Gaskojen at germination period. Journal of Agricultural Technology 7(6):1743-1754.
9. Mohamad Abadi, A.A., Rezvani Moghaddam, P., **Fallahi**, H.R. and, Z. Bromand Rezazadeh. 2011. Effect of chemical and organic fertilizers on quantitative and qualitative characteristics of fenugreek (*Trigonella foenum-graecum*) forage. Journal of Agroecology. 3(4): 491-499. [In Persian with English Summary].
10. Koocheki, A., Rezvani Moghaddam P. **Fallahi**, H.R. 2011. Effects of spring, summer and autumn planting dates, irrigation management and companion crops on saffron yield. Journal of Agroecology. In press. [In Persian with English Summary].

11. Amiri, M.B., Rezvani moghaddam, P., Ghorbani, R., **Fallahi, H.R.,** Fallah Poor, F. and R. Dayhim Far. 2011. Effects of seed priming by biofertilizers on the growth characteristics of three wheat cultivars at the emergence period under greenhouse conditions. Iranian Journal of Field Crop Research. 11(1): 64-73. [In Persian with English Summary].
12. Amiri, M.B.,Rezvani Moghaddam, P., Ehyai, H.R., **Fallahi, H.R.,**Aghhavani shajari, M. 2011. Effect of osmotic and salinity stresses on germination and seedling growth indices of artichoke (*Cynara scoolymus*) and purple coneflower (*Echinacea purpura*). Environmental Stress in Crop Science. 3(2): 165-174. [In Persian with English Summary].
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14. Amiri, M.B.,Rezvani Moghaddam, P., Ehyai, H.R., **Fallahi, H.R.,**Aghhavani shajari, M. 2011.Response of germination and seedling growth of Hyssop (*Hyssopus officinalis*) and Marguerite (*Chrysanthemum superbum*) medicinal plants to water stress. Journal of Plant Ecophysiology. 8(3): 65-77. [In Persian with English Summary].
15. Aghhavani Shajari, M., Nemati, S.H., Mehrbakhsh, M.M., **Fallahi, H.R.,** Haghighi Tajvar, F. 2012. Effects of different substrates and irrigation on seedling growth indices of different cultivars of tomato (*Lycopersicon esculentum*) in greenhouse. Journal of Horticultural Science. 26(1): 87-95. [In Persian with English Summary].
16. **Fallahi, H.R.,** Rezvani Moghaddam, P., Nassiri Mahallati, M., Behdani, M.A. 2013. Validation of RothC model for evaluation of carbon sequestration in a restorated ecosystem under two different climatic scenarios. Journal of Water and Soil. 27(3): 656-668. [In Persian with English Summary].
17. **Fallahi, H.R.,** Rezvani Moghaddam, P., Nassiri Mahallati,M., Behdani, M.A., Aghhavani Shajari, M., Amiri, M.B. 2013. Influence of seed nitrogen content and biofertilizer priming on wheat germination in salinity stress conditions. Archives of Agronomy and Soil Science. 59(6): 791-801.
18. Rezvani Moghaddam, P., **Fallahi, H.R.,** Aghhavani-Shajari, M., Nassiri Mahallati, M. 2013. Effects of harvest date, harvest time, and post-harvest management on quantitative and qualitative traits in seedless barberry (*Berberis vulgaris* L.). Industrial Crops and Products. 42: 30-36.
19. **Fallahi, H.R.,** Rezvani Moghaddam, P., Nassiri Mahallati, M., Behdani, M.A. 2013. The use of diversity indices to assess the effect of restoration and conservation on plant diversity of a rangeland in South Khorasan Province, Iran. Journal of Agricultural Technology 9(2):395-412.
20. **Fallahi, H.R.,** Rezvani-Moghaddam, P., Nassiri-Mahallati, M., Behdani, M.A. 2014. Floristic analysis and study of plant diversity in protected rangeland of HusseinAbad - South Khorasan Province, Iran. Iranian Journal of Range and Desert Research. 21(1): 62-74. [In Persian with English Summary].

21. Rezvani-Moghaddam, P., Mohammad Abadi, A.A., **Fallahi, H.R.,** Aghhavani shajari, M. 2014. Effects of nutrient management on flower yield and corm characteristics of saffron (*Crocus sativus* L.). Journal of Horticultural Science. 28(3): 427-434. [In Persian with English Summary].
22. **Fallahi, H.R.,** Paravar, A., Behdani, M.A., Aghhavani-Shajari, M., Fallahi, M.J. 2014. Effects of saffron corm and leaf extracts on early growth of some plants to investigate the possibility of using them as associated crop. Notulae Scientia Biologicae. 6(3):282-287.
23. **Fallahi, H.R.,** Mohammadi, M., Aghhavani-Shajari, M., Ranjbr. F. 2015. Determination of germination cardinal temperatures in two basil (*Ocimum basilicum* L.) cultivars using non-linear regression models. Journal of Applied Research on Medicinal and Aromatic Plants 2: 140-145.
24. **Fallahi, H.R.,** Taherpour Kalantari, R., Aghhavani-Shajari, M., Soltanzadeh, M.G. 2015. Effect of super absorbent polymer and irrigation deficit on water use efficiency, growth and yield of cotton. Notulae Scientia Biologicae. 7(3):338-344.
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27. Aghhavani Shajari, M., Rezvani Moghaddam, P., Koocheki, A., **Fallahi, H.R.,** Taherpour Kalantari, R. 2015. Evaluation of the effects of soil texture on yield and growth of saffron (*Crocus sativus* L.). Saffron Agronomy & Technology. 2(4): 311-322. [In Persian with English Summary].
28. **Fallahi, H.R.,** Rezvani-moghaddam, P., Amiri, M.B., Aghhavani-Shajari, M., Yazdani Biuki, R. 2015. The study of nutritional management of mother plant and seed priming by biofertilizers on improve salinity tolerance of wheat (*Triticum aestivum* L.) cv. Sayonz at germination period. Journal of Agroecology. 6(4): 689-700. [In Persian with English Summary].
29. Behdani, M.A., Jami Al-Ahmadi, M., **Fallahi, H.R.** 2016. Biomass partitioning during the life cycle of saffron (*Crocus sativus* L.) using regression models. Journal of Crop Science and Biotechnology. 19(1): 71-76.
30. **Fallahi, H.R.,** Zamani, G., Mehrabani, M., Aghhavani-Shajari, M., Samadzadeh, A. 2016. Influence of superabsorbent polymer rates on growth of saffron replacement corms. Journal of Crop Science and Biotechnology. 19(1): 77-84.
31. Samadzadeh, A.R., **Fallahi, H.R.,** Nakhaei, S., Aghhavani-Shajari, M., Amirizadeh, A. 2016. Impact of super absorbent polymer and irrigation management on seed and essential oil yields of cumin. Journal of Medicinal Plants and by Products. 2: 145-152.
32. Koocheki, A., Rezvani Moghaddam, P., **Fallahi, H.R.,** Aghhavani-Shajari, M. 2016. The study of saffron (*Crocus Sativus* L.) replacement corms growth in response to planting date, irrigation

management and companion crops. Saffron Agronomy & Technology. 4(1): 3-18. [In Persian with English Summary].

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34. Rezvani-Moghaddam, P., **Fallahi, H.R.,** Balandari, A. 2016. Ecological aspects and phytochemical characteristics of some medicinal plants of Labiateae in Khorasan province. Plant Ecophysiology. 24: 209-222. [In Persian with English Summary].
35. Koocheki, A., **Fallahi, H.R.,** Amiri, M.B., Ehyaei, H.R. 2016. Effects of humic acid application and mother corm weight on yield and growth of Saffron (*Crocus sativus* L.). Journal of Agroecology 7(4): 425-442. [In Persian with an Extended English Summary].
36. Koocheki, A., Rezvani Moghaddam, P., **Fallahi, H.R.** 2016. Effects of planting dates, irrigation management and cover crops on growth and yield of saffron (*Crocus sativa* L.). Journal of Agroecology. 8(1): 435-451. [In Persian with an Extended English Summary].
37. Behdani, M.A., Zamani, G., **Fallahi, H.R.,** Sayyari Zohan, M.H., Samadzadeh, A. 2016. Evaluation of cormel growth criteria of saffron in response to different organic and conventional production systems. Saffron Agronomy and Technology. 5(2):133-147. [In Persian with English Summary].
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39. **Fallahi, H.R.,** Ghorbani, M., Aghhavani-Shajari, M., Samadzadeh, A., Asadian, A.H. 2017. Qualitative response of roselle to planting methods, humic acid application, mycorrhizal inoculation and irrigation management. Journal of Crop Improvement. 31(2): 192-208.
40. **Fallahi, H.R.,** Aghhavani-Shajari, M., Mohammadi, M., Kadkhodaei Barkook, R., Zareei, E. 2017. Predicting of flixweed (*Descurainia sophia* (L.) Webb ex Prantl) germination response to temperature using regression models. Journal of Applied Research on Medicinal and Aromatic Plants 6: 131-134.
41. **Fallahi, H.R.,** Ramazani, H.R., Ghorbani, M., Aghhavani-Shajari, M. 2017. Path and factor analysis of roselle (*Hibiscus sabdarifa* L.) performance. Journal of Applied Research on Medicinal and Aromatic Plants 6: 119-125.
42. **Fallahi, H.R.,** Ghorbani, M., Aghhavani-Shajari, M., Samadzadeh, A., Asadian, A.H. 2017. Influence of arbuscular mycorrhizal inoculation and humic acid application on growth and yield of roselle (*Hibiscus sabdariffa* L.) and its mycorrhizal colonization index under deficit irrigation. International Journal of Horticultural Science and Technology. 3(2): 113-128.

43. **Fallahi, H.R.**, Zamani, Gh., Aghhavani-Shajari, M., Samadzadeh, A.R., Branca, F., Mehrabani, M. 2017. Saffron flower and stigma yield changes in response to application of different levels of super absorbent polymer. Journal of Medicinal Plants and By-products. 6(2): 145-151
44. **Fallahi, H.R.**, Aghhavani-Shajari, M., Feizi, H., Sahabi, H. 2017. Mother corm weight and soil amendment improves the vegetative and reproductive growth of saffron (*Crocus sativus* L.). Journal of Medicinal & Spice Plants (Zeitschrift für Arznei- & Gewürzpflanzen). 22(3): 110-114.
45. **Fallahi, H.R.,** Ghorbany, M., Aghhavani-Shajari, M., Samadzadeh, A., Khayyat, M., Maraki, Z., Asadian, A.H. 2017. Effects of irrigation management, mycorrhizal inoculation and humic acid application on color characteristics of roselle (*Hibiscus sabdariffa* L.) dried sepals. Environmental Stresses in Crop Science. 10(4): 571-582. [In Persian with Extended English Summary].
46. **Fallahi, H.R.,** Aminifard, M.H., Jorkesh, A. 2018. Effects of thiamine spraying on biochemical and morphological traits of basil plants under greenhouse conditions. Journal of Horticulture and Post-Harvest Research. 1(1): 27-36.
47. **Fallahi, H.R.,** Aghhavani-Shajari, M., Branca, F., Davarzani, J. 2018. Effect of different concentrations of saffron corm and leaf residue on the early growth of arugula, chickpea and fenugreek under greenhouse conditions. Acta agriculturae Slovenica. 111(1): 51-61.
48. Khayyat, M., Jabbari, M., **Fallahi, H.R.,** Samadzadeh, A. 2018. Effects of corm dipping in salicylic acid or potassium nitrate on growth, flowering, and quality of saffron. Journal of Horticultural Research. 26(1): 13-21.
49. Aminifard, M.H., Jorkesh, A., **Fallahi, H.R.,** Alipoor. K. 2018. Foliar application of thiamin stimulates the growth, yield and biochemical compounds production in coriander and fenugreek. Journal of Horticultural Research. 26(1): 77-85.
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53. **Fallahi, H.R.,** Mahmoodi, S. 2018. Influence of organic and chemical fertilization on growth and flowering of saffron under two irrigation regimes. Saffron Agronomy & Technology 6(2): 147-166. [In Persian with English Summary].

54. **Fallahi, H.R.,** Mahmoodi, S. 2018. Impact of water availability and fertilization management on saffron (*Crocus sativus* L.) biomass allocation. Journal of Horticulture and Postharvest Research. 1(2): 131-146.
55. Ramazani, H.R. **Fallahi, H.R.,** Asadian, A.H. 2018. Effect of deficit irrigation and different levels of nitrogen chemical fertilizer on forage properties in Kochia. Journal of Applied Research of Plant Ecophysiology. 5(1): 1-15. [In Persian with English Summary].
56. Aminifard, M.H., Jorkesh, A., **Fallahi, H.R.** 2019. Biochemical, morphological and reproductive growth response of fenugreek to foliar application of glycine betaine and salicylic acid. Journal of Medicinal & Spice Plants (Zeitschrift für Arznei- & Gewürzpflanzen). 23(1): 43-48.
57. Koocheki, A., Rezvani Moghaddam, P., Aghhavani-Shajari, M., **Fallahi, H.R.** 2019. Corm weight or number per unit of land: which one is more effective when planting corm, based on the age of the field from which corms were selected? Industrial Crops and Products. 131: 78-84.
58. Aminifard, M.H., Khandan Deh-Arbab, S., **Fallahi, H.R.,** Kaveh, H. 2019. Effects of different levels of algae extract and mother corm weight on photosynthetic pigment content, growth and yield of saffron. Journal of Saffron Research. Accepted. [In Persian with English Summary].
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62. Samadzadeh, A.R., Zamani, G., **Fallahi, H.R.** 2020. Possibility of quinoa production under South-Khorasan climatic condition as affected by planting densities and sowing dates. Applied Research in Field Crops. 33(1): 82-104 (In Persian with English Summary).
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sesame yield. Journal of Water Research in Agriculture. 34(2): 243-255. (In Persian with English Summary).

66. **Fallahi, H.R.,** Abbasi Aval Bohlooli, S., Noferesti, E., Hosseini, S.M., Seddigh Makoo, S., Moodi, M., Khezri, M. 2020. Evaluation the possibility of saffron transplanting and corm production in soilless planting system. Journal of Saffron Research. 8(2): 79-84 (In Persian with English Summary).
67. **Fallahi, H.R.,** Behdani, M.A., Rezvani Moghaddam, P., Jami Al-Ahmadi, M. 2021. Principles of standardization for organic saffron production in Iran. Saffron Agronomy & Technology, 9(1): 43-79. [In Persian with English Summary].
68. **Fallahi, H.R.,** Aghhavani-Shajari, M., Sahabi, H., Behdani, M.A.,Sayyari-Zohan, M.H., Vatandooste, S. 2021. Influence of some pre and post-harvest practices on quality of saffron stigmata. Scientia Horticulturae. 278: 109846.
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71. Vahidi, H., Mahmoodi, S., Parsa, S., **Fallahi, H.R**. 2021. Evaluation the yield and intercropping indices of millet (*Panicum miliaceaum* L.) and quinoa (*Chenopodium quinoa* Willd.) under effect of plant density and cultivation ratios in Birjand region. Journal of Agroecology. 13(3): 471-488. [In Persian with English Summary].
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75. Aminifard, M.H., Khandan Deh Arbab, S., **Fallahi, H.R.,** Kaveh, H. 2022. Effects of different levels of algae extract and mother corm weight on photosynthetic pigment content, growth and yield of saffron. Journal of Saffron Research. 9(2): 296-309. [In Persian with English Summary].

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C- Research projects

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