

Batool Hosseinpour

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Research and Work Experience

2009-2012

- Head of “Plant Production and Sustainable Agriculture” Department.

December 2009-present

Molecular genetics, Tissue culture,
Bioinformatics

**Iranian Research Organization for Science and Technology (IROST),
Department of Plant Production, Institute of Agriculture.** Assistant Professor
Research in molecular mechanisms of abiotic stresses in fruit trees ; plant cell, tissue
and organ culture; next generation sequencing, bioinformatics

- Principal Investigator of “Identification of spring frost resistance in almond flowers” project.
- Supervisor of Ph.D. thesis of 4 graduate students , 9 MSc students.
- Lecturer for the course of “Molecular Plant Breeding”.
- Lecturer for the course of “Genetics”.
- Referee of International Kwarazmi and Kwarazmi Youth Awards, sponsored by UNESCO, FAO, UNIDO, COMSATS
- Referee of patent applications.
- Development of several micropropagation protocols for various fruit rootstocks, forest trees and small fruit trees.
- Principal investigator of “somatic embryogenesis in *Ulmus glabra*”.
- Principal investigator of " micropropagation of various varieties of raspberries in order to cultivation in North of Iran".
- Principal investigator of "micropropagation of various varieties of raspberries in order to cultivation in frost-threatened areas of Iran".

2013-present

Company of OMICS. INVITED RESEARCHER

Research in human stem cells growth and differentiation, study of molecular mechanism of different cancers using NGS technology, study of animal genomes, NGS data analysis.

- Identification of SSRs in leukemia cancer stem cell for the first time

2014-2017

University of Yazd, Institute of arid area and deserts.

PI on the project “Identification of spring frost resistance mechanism in almond flowers”.

Awards

ICED awards

- International Scientific Cooperation, Ministry of Science, Research and Technology : 150000000Rials; **Next Generation Sequencing Data analysis**

Supervisory Experience

PhD students 2013-present

- 2013-2015: **Sadegh Sepahvand**, "Transcriptional analysis of almond flowers in response to spring frost resistance". **Azad University, Department of Horticulture**. PhD supervision
- 2015-present: **Ali Mousavi**, "Differential gene expression study in almond flowers under frost conditions". **Azad University, Department of Horticulture**. PhD supervision
- 2015-present: **Shahram Jafarnia**, "Transcriptome profiling of *Quercus branti* in response to abiotic stresses". **University of Tarbiat Modarres, Department of Natural resources**. PhD supervision
- 2015-present: **Narjes Amirchakhmaghi**, "Identification of tolerant genotypes in wild apple populations (*Malus orientalis* Uglitzk) in response to *Phytophthora cactorum*". **University of Tarbiat Modarres, Department of Natural resources**. PhD supervision

MSC students

- 2011: **Maryam Mirabbasi**, "Optimization of callus induction and regeneration in *Ulmus glabra*".
- 2012: **Ali Rezai**, Effects of culture media and growth regulators on establishment, proliferation and rooting of a vegetative scion and grafted rootstocks.
- 2012: **Zahra Didar**, "Effects of culture media and growth regulators on micropropagation of GF677 and MAMA60 rootstocks".
- 2012: **Rafi Haghverdi**, "Micropropagation of lily of the valley".
- 2013: **Shirin Direkvand**, "In vitro rooting of Ishtara rootstock". Co-supervisor
- 2013: **Elahe Skandari**, "Expression analysis of expansin genes in response to abiotic stresses in wheat".
- 2014: **Fatemeh Mozaffarzadeh**, "Micropropagation of *Rubus idaeus*".
- 2014: **M. Eghbali**, "Germination and micropropagation of *Vaccinium macrocarpon*".

Funded Projects

- 2012-2013 ➤ **Iranian Research Organization for Science and Technology (IROST), Department of Plant Production, Institute of Agriculture**. PI on "Induction of somatic embryogenesis from in vitro leaves of *Ulmus glabra*".
- 2013-present ➤ **University of Yazd, Institute of arid area and deserts**. PI on the project "Identification of spring frost resistance mechanism in almond flowers".
- 2016-present ➤ **Iranian Research Organization for Science and Technology (IROST), Department of Plant Production, Institute of Agriculture**. PI on the project "Micropropagation of various varieties of raspberries in order to cultivation in North of Iran".
- 2016-present ➤ **Iranian Research Organization for Science and Technology (IROST), Department of Plant Production, Institute of Agriculture**. PI on the project "Micropropagation of various varieties of raspberries in order to cultivation in frost-threatened areas of Iran".
- 2016-present ➤ **Iranian Research Organization for Science and Technology (IROST), Department of Plant Production, Institute of Agriculture**. PI on the project "Micropropagation of various varieties of blueberries in order to cultivation in frost-threatened areas of Iran".

Membership on professional bodies

- Committee member of International Kwarazmi and Kwarazmi Youth Awards, sponsored by UNESCO, FAO, UNIDO, COMSATS since 2010.
- Reviewer of Iranian journal of Genetics since 2011.
- Reviewer of Iranian Journal of Genetics and Plant Breeding (IJGPB) since 2013
- Reviewer of Journal of Crop Improvement since 2013.
- Reviewer of International Journal of Horticultural Science and Technology since 2013.
- Committee member of patent applications 2012-2013.
- Reviewer of PLOS One journal, 2013.

Refereed full papers

- Stem Cells Reviews & Reports** (IF:4.5) ➤ Embryonic stem cell interactomics: the beginning of a long road to biological function. Maryam yousefi, Vahid Hajihosseini, Woojin Jung, **Batool Hosseinpour** et al. 2012. **Stem cell reviews and reports**. 1138-1154
- PLOS ONE** (IF: 3.7) ➤ Network Analysis of Arabidopsis Female Gametophyte Development. 2012, **B. Hosseinpour**, HajiHoseini, V., Kashfi, R., ES. Ebrahimie, Hemmatzadeh, F. **PLOS One**.
- Frontiers in Genetics** (IF:4.2) ➤ Signed weighted gene co-expression network analysis of endometriosis identifies transcriptional modules associated with its main hallmarks. Bakhtiarzadeh, MR., Hosseinpour, B., Maryam Shahosseini, Gifani, P. **2018**.
- Gene** (IF:2.4) ➤ Predicting distinct organization of transcription factor binding sites on the promoter regions: a new genome-based approach to expand human embryonic stem cell regulatory network. (2013). **Batool Hosseinpour**, Mohammad Reza Bakhtiarzadeh, Pegah Khosravi, Esmail Ebrahimie. **Gene**.
- Plant Biology** (ISC) ➤ Induction of direct somatic embryogenesis in leaf explants of *Ulmus glabra*. Seyer Maryam Mirabbasi, **Batool Hosseinpour***, Asa Ebrahimi, Seyed Ali Ghaemmagha Mohammad Reza Sanjabi.(2014). **Plant Biology**.
- Gene** (IF: 2.4) ➤ Comparison of hematopoietic cancer stem cells with normal stem cells leads to discovery of novel differentially expressed SSRs. Gene. 2014 Oct 15;550(1):10-7. **Gene. Batool Hosseinpour**, Mohammad Reza Bakhtiarzadeh, Maryam Mirabbasi, Esmail Ebrahimie.
- Journal of Novel Applied Sciences** ➤ Prevention of shoot tip necrosis, hyperhydricity and callus production associated with vitro shoot culture of *Ulmus glabra*. (2014). Maryam Mirabbasi, **Batool Hosseinpour** **Journal of novel applied sciences**
- Plant Cell Biotechnology and Molecular Biology** (ISI) ➤ In vitro propagation and rooting of Garnem rootstock. Ali Rezaei , **Batool Hosseinpour***. 2014
- Advances in Bioresearch** (ISI) ➤ Evaluation the resistance of almond cultivars to spring frost at different phenological stages. (2014). Advances in Bioresearch. Vol:5 (4). Sadegh Sepahvand, Ali Imani, Kazem Kamali Aliabad, **Batool Hoseinpour**, Vahid Abdossi
- Genome** (IF: 1.4) ➤ Large-scale prediction of long intergenic non-coding RNAs in sheep using a comparative genomics approach. Mohammad Reza Bakhtiarzadeh, **Batool Hosseinpour**, Babak Arefnezhad, Seyed Alireza Salami.**2016**
- Plant Cell Biotechnology and Molecular Biology** (ISI) ➤ The effect of culture media and growth regulators on proliferation and rooting of plum rootstock Ishtara. Ali Rezaei , **Batool Hosseinpour***, Naser Bouzari . 2016
- Iranian Journal of Genetics and Plant Breeding** ➤ Effects of different media culture on proliferation of MAMA60 rootstock. **B. Hosseinpour***, Maryam Mirabbasi, Majid Masoumian, SA Ghaemmaghami. 2016.
- MGAG, Springer**(IF: 2.9) ➤ Transcriptome profiling of fully open flowers in a frost-tolerant almond genotype in response to freezing stress. **Batool Hosseinpour***. SA Sepahvand, Kazem Kamali, MR Bakhtiarzadeh, Ali Imani, AR Assareh, AR Salami.,**2017**
- iForest** (IF: 1.8) ➤ Effect of drought stress on some growth, morphological, physiological, and biochemical parameters of two different populations of *Quercus brantii*. Shahram Jafarnia¹, Moslem Akbarinia^{1*}, **Batool Hosseinpour**2**, Seyed Ali Mohammad Modarres Sanavi³, Seyed Alireza Salami⁴

- Genetic Resources and Crop Evolution (IF:1.43)** ➤ First insight into genetic diversity and population structure of the Caucasian wild apple in the Hyrcanian forest (Iran) and its resistance to apple scab and powdery mildew. Hamed yousefzadeh; Narges Amirchakhmaghi; **Batool Hosseinpour**; Kambiz Espahbodi; Majid Aldaghi. **2017**
- Genetic resources and crop evolution (IF:1.13)** ➤ First insight into genetic diversity and population structure of the Caucasian wild apple (*Malus orientalis* Uglitzk.) in the Hyrcanian forest (Iran) and its resistance to apple scab and powdery mildew. Amirchakhmaghi, N., Yousefzadeh, H., **Hosseinpour, B.**, Espahbodi, K., Aldaghi, M. and Cornille, A. **2018**.
- In vitro cellular and developmental biology (IF: 1.057)** ➤ **Development of a micropropagation protocol for *Malus orientalis* using axillary buds.** Amirchakhmaghi, N., **Hosseinpour, B.**, Yousefzadeh, H. 2019

Full Papers Under Review

- 2019 ➤ Variation of Caucasian apple (*Malus orientalis* Uglitzk.) populations in response to *Erwinia amylovora*.

Full Papers in Preparation

Books

- 2004 ➤ Polymerase chain reaction, M.R. Behamta and **B. Hosseinpour**. Translated in Persian. 2004.
- 2012 ➤ Analysis of genes and genome. Mohammadi A., Dehghan Nayeri F., **B. Hosseinpour**. Translated in Persian. 2012.

Refereed Conference Papers

- 2003 ➤ **Hosseinpour, B.**, Agayev M. Y., Shakib, A. L., Nematzadeh, G. Microsporogenesis and embryogenesis via microspore culture in *Brassica napus*. Proceedings of 5th International Symposium on Recent Advances in Plant Biotechnology, Slovak Republic, September 2003.
- 2002 ➤ **Hosseinpour, B.**, Agayev M. Y., Shakib, A. L., Nematzadeh, G. Critical stage in microspore development for transition from gametophytic to embryogenic state in *Brassica napus*. 2002. Proceedings of 3rd National Congress of Biotechnology, Iran. p: 255.
- 2003 ➤ **Hosseinpour, B.**, Shakib, A. L. The effect of chilling and heat shock on microspore embryogenesis and regeneration in *Brassica napus*. 2003. Proceedings of 8th Congress of Agronomy and Plant Breeding. Iran. P: 128.
- 2004 ➤ **Hosseinpour, B.** Resistance mechanisms to plant viruses. Proceedings of 2nd Iranian Congress on Virology. February 2004. p: 318.

- 2012 > Mirabbasi, S.M., **B. Hosseinpour**, 2013, The survey of exigency of kinetin on induction of direct somatic embryogenesis in leaf explants of *Ulmus glabra*. 8th Iranian National Conference of Biotechnology and 4th Iranian National Conference of Biosafety in Tehran University. Iran.
- 2012 > Mirabbasi, S.M., **B. Hosseinpour**, 2012, The comparison of two different medium cultures; MS and modified ME, on micropropagation of *Ulmus glabra*. The 1st Iranian national conference on solutions to access sustainable development in agriculture, natural resource and the environment. Government ministry hall -Iran.
- 2012 > Mirabbasi, S.M., **B. Hosseinpour**, 2012, The effect of different hormone treatments on direct somatic embryogenesis in leaf explants of *Ulmus glabra*. The 1st Iranian national conference on solutions to access sustainable development in agriculture, natural resource and the environment. Government ministry hall -Iran.
- 2012 > Mirabbasi, S.M., **B. Hosseinpour**, 2012, The effect of different Topolin's level on micropropagation of *Ulmus glabra*. The 1st Iranian national conference on solutions to access sustainable development in agriculture, natural resource and the environment. Government ministry hall -Iran.
- 2012 > Mirabbasi, S.M., **B. Hosseinpour**, 2012, The effect of different light treatments on induction of direct somatic embryogenesis in leaf explants of *Ulmus glabra*. The 1st Iranian national conference on solutions to access sustainable development in agriculture, natural resource and the environment. Government ministry hall -Iran.
- 2013 > Effect of growth regulators on enlongation and rooting of invitro Garnem explants. Rezaie Ali, **B. Hosseinpour**, Bozari N.(2013). Proceedings of Iranian Congress on sustainable agriculture.
- 2013 > Evaluation of Callus formation and root thickness in invitro Garnem explants. Rezaie Ali, **B. Hosseinpour**, Bozari N.(2013). Proceedings of Iranian Congress on sustainable agriculture.
- 2013 > Evaluation of elongatuion, auxillary and adventitious shoot number in invitro culture of *Mazzard*×*Mahelab*. Didar Z., **B. Hosseinpour**, Bouzari N. Proceedings of Iranian Congress on Biotechnology. (2013)
- 2015 > Transcriptome profiling of almond flowers at blooming stage in a freeze-tolerant genotype under frost condition. **B. Hosseinpour**, M.R. Bakhtiarizadeh, K. Kamali Aliabad, S. Sepahvand. Plant Genome Evolution Congress. (2015), Amesterdam

Editorial Boards and Grant Reviews

- Funding bodies reviewer** > Reviewer of various funding bodies including IROST and Ministry of Sciences & Researches

Participations to National Programs

- 2015 > Analysis of next generation sequencing data: RNA seq and small RNA-seq, 2015, 18 hours
- 2015 > Analysis of next generation sequencing data: variant discovery at genome level, 2015, 18 hours
- 2015 > Machine learning and data mining in bioinformatics, 2015, 18 hours
- 2015 > Application of gene networks and gene ontology in systems biology, 2015, 18 hours
- 2013 > Introduction to Linux Course, 2013, 30 hours
- 2012

2012
2007

- Workshop on Application of Genetic Engineering for Improvement of Fruit Trees, University of Tehran, 2012
- Workshop on Paper Writing, University of Tehran, 2012
- Workshop on Perl Programming, 2007, University of Arizona.

Computer Skills

Professional Softwares related to Genetics

- SPSS, DNA Star, VNTI, Primer3plus, Oligo, Beacon
- R; SAS; RNA seq data analysis; Linux

Experimental Skills

Molecular Biology

- qRT-PCR, Cloning, Gene transformation, expression analysis, cell and tissue culture, functional genomics, Protein-Protein interaction analysis, transcriptomics

Fields of Interests

Stem Cells and Cancer

- Mechanisms of stem cell growth and differentiation and cancers using computational approaches.
- Identification of specific SSRs in cancer stem cells and animal species.
- Analysis NGS data of different cancers.

Biotic and abiotic Stresses in Plants

- Plant breeding research program fruit and forest trees.
- Molecular aspects of frost freezing tolerance mechanism in flowers and young fruits using RNA sequencing and computational approaches.
- Exploring regulatory network to identify novel key factors controlling frost freezing tolerance.

Plant Tissue Culture

- In vitro culture of plant cells, organs or tissues for various purposes of mass production, germplasm preservation, plant breeding, physiological studies, and genetic engineering.

Education

2005-2009

- Department of Plant Breeding, University of Tehran, Iran. PhD in Genetics and Genetic Engineering. Ph.D. thesis entitled "Expression analysis of genes involved in development of female gametophyte in *Arabidopsis thaliana*".

2007-2008

- Exchange PhD student, Department of Plant Sciences, University of Arizona, USA. Advisor: Dr Ramin Yadegari,

2001-2003

- MSc in Plant breeding, Department of Plant Breeding, University of Mazandaran, Iran. MSc thesis entitled "Somatic embryogenesis using microspore culture in *Brassica napus*".

1997-2001

- BSc in Agronomy, Department of Agronomy, University of Tehran, Iran