

**Batool Hosseinpour**

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Science and Technology (IROST)  
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## Research and Work Experience

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**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 6 graduate students , 13 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, stone fruits and citrus rootstocks.
  - 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".
  - Optimizatiin of somatic embryogenesis from zygotic embryos of *Arabidopsis  
thaliana*.
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**2013-2017**

**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”.

**2020-present**

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

## Awards

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**ICED awards**

- International Scientific Coopreation, Ministry of Science, Research and Technology :  
4000\$; **Next Generation Sequencing Data analysis**

## Supervisory Experience

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### 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
- 2015-2018: **Shahram Jafarnia**, “Transcriptome profiling of *Quercus branti* in response to abiotic stresses”. **University of Tarbiat Modarres, Department of Natural resources**. PhD supervision
- 2015-2018: **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
- 2016-2020: **Hamid Bina**, “*Malus orientalis* in Iran”.
- 2020-present: **Mojgan Elahipour**, “Determination of squalene in essential oil from callus culture of seed and endosperm of Amaranth spp. **Int. University of IK of Ghazvin**. 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 scion 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 corymbosum*”.
- 2017: **Kolsum Mohammadi**, “In vitro culture of *Vaccinium corymbosum*”.
- 2021: **Maryam Karbasi**, Expression analysis of Glu gene in response to cold stress in melon. University of Tehran.

## Funded Projects

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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*”.

2013-2015

- **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

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- 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

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| <p><b>Stem Cells Reviews &amp; Reports</b><br/>(IF:4.5)</p>        | <ul style="list-style-type: none"> <li>➤ Embryonic stem cell interactomics: the beginning of a long road to biological function. Maryam yousefi, Vahid Hajhosseini, Woojin Jung, <b>Batool Hosseinpour</b> et al. 2012. <b>Stem cell reviews and reports</b>. 1138-1154</li> </ul>   |
| <p><b>PLOS ONE</b> (IF: 3.7)</p>                                   | <ul style="list-style-type: none"> <li>➤ Network Analysis of Arabidopsis Female Gametophyte Development. 2012, <b>B. Hosseinpour</b>, HajiHoseini, V., Kashfi, R., ES. Ebrahimie, Hemmatzadeh, F. <b>PLOS One</b>.</li> </ul>  |
| <p><b>Frontiers in Genetics</b> (IF:4.2)</p>                       | <ul style="list-style-type: none"> <li>➤ 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. <b>2018</b>.</li> </ul>   |
| <p><b>Gene</b> (IF:2.4)</p>  | <ul style="list-style-type: none"> <li>➤ 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). <b>Batool Hosseinpour</b>, Mohammad Reza Bakhtiarzadeh, Pegah Khosravi, Esmail Ebrahimie. <b>Gene</b>.</li> </ul> |
| <p><b>Plant Biology</b> (ISC)</p>                                  | <ul style="list-style-type: none"> <li>➤ Induction of direct somatic embryogenesis in leaf explants of <i>Ulmus glabra</i>. Seyer Maryam Mirabbasi, <b>Batool Hosseinpour*</b>, Asa Ebrahimi, Seyed Ali Ghaemmagha Mohammad Reza Sanjabi.(2014). <b>Plant Biology</b>.</li> </ul>  |
| <p><b>Gene</b> (IF: 2.4)</p>                                       | <ul style="list-style-type: none"> <li>➤ 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. <b>Gene</b>. <b>Batool Hosseinpour</b>, Mohammad Reza Bakhtiarzadeh, Maryam Mirabbasi, Esmail Ebrahimie.</li> </ul>                            |
| <p><b>Journal of Novel Applied Sciences</b></p>                    | <ul style="list-style-type: none"> <li>➤ Prevention of shoot tip necrosis, hyperhydricity and callus production associated with vitro shoot culture of <i>Ulmus glabra</i>. (2014). Maryam Mirabbasi, <b>Batool Hosseinpour</b> <b>Journal of novel applied sciences</b></li> </ul>  |
| <p><b>Plant Cell Biotechnology and Molecular Biology</b> (ISI)</p> | <ul style="list-style-type: none"> <li>➤ In vitro propagation and rooting of Garnem rootstock. Ali Rezaei , <b>Batool Hosseinpour*</b>. 2014</li> </ul>  |
| <p><b>Advances in Bioresearch</b> (ISI)</p>                        | <ul style="list-style-type: none"> <li>➤ 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, <b>Batool Hosseinpour</b>, Vahid Abdossi</li> </ul>  |
| <p><b>Genome</b> (IF: 1.4)</p>                                     | <ul style="list-style-type: none"> <li>➤ Large-scale prediction of long intergenic non-coding RNAs in sheep using a comparative genomics approach. Mohammad Reza Bakhtiarzadeh, <b>Batool Hosseinpour</b>, Babak Arefnezhad, Seyed Alireza Salami.<b>2016</b></li> </ul>   |
| <p><b>Plant Cell Biotechnology and Molecular Biology</b> (ISI)</p> | <ul style="list-style-type: none"> <li>➤ The effect of culture media and growth regulators on proliferation and rooting of plum rootstock Ishtara. Ali Rezaei , <b>Batool Hosseinpour*</b>, Naser Bouzari . 2016</li> </ul>  |

- Iranian Journal of Genetics and Plant Breeding** ➤ Effects of different media culture on proliferation of MAMA60 rootstock. **B. Hosseinpour\***, Maryam Mirabbassi, 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 Bakhtiarizadeh, 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 Jafarnia<sup>1</sup>, Moslem Akbarinia<sup>1\*</sup>, **Batool Hosseinpour\*\*2**, Seyed Ali Mohammad Modarres Sanavi<sup>3</sup>, Seyed Alireza Salami<sup>4</sup>
- 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
- Molecular ecology** (IF: 6.67) ➤ Evidence of additional event of apple domestication in Iran, with contributions from the Caucasian crab apple *Malus orientalis*. 2022. Hamid Bina, Hamed Yousefzadeh, Anthony Venon, Carine Remoué, Agnès Rousselet, Matthieu Falque, Faramarzi Shadab, Chen Xilong, Jarkyn Samanchina, David Gill, Akylai Kabaeva, Tatiana Giraud, **Hossainpour Batool**, Hamid Abdollahi, Ivan Gabrielyan, Nersesyan Anush, Amandine Cornille
- Forest Research and Development** ➤ Genetic diversity and structure of Iranian wild apples (*Malus orientalis* Uglitzk) distributed in Iran using SSR markers. Bina, H., Yousefzadeh, H., **Hosseinpour, B.** and Abdollahi, H., 2022
- Journal of crop improvement** ➤ Evaluating responses of Caucasian apple (*Malus orientalis*) from Hyrcanian forests to fire blight (*Erwinia amylovora*) using an in vitro assay. Amirchakhmaghi, N., Yousefzadeh, H., **Hosseinpour, B.**, Abdollahi, H. and Larsen, B., 2022. Journal of Crop Improvement, pp.1-12.

## Full Papers Under Review

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2022

## Full Papers in Preparation

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## Books

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- 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

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- 2003 ➤ **Hosseinpour, B.**, Agayev M. Y., Shakib, A. L., Nematzadeh, G. Microsporogenesis and embryogenesis via microspore culture in *Brassica napus*. Proceedings of 5<sup>th</sup> 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 3<sup>rd</sup> 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 8<sup>th</sup> Congress of Agronomy and Plant Breeding. Iran. P: 128.
- 2004 ➤ **Hosseinpour, B.** Resistance mechanisms to plant viruses. Proceedings of 2<sup>nd</sup> Iranian Congress on Virology. February 2004. p: 318.
- 2012 ➤ Mirabbasi, S.M., **B. Hosseinpour**, 2013, The survey of exigency of kinentin 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 glabrae*. 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 elongation, axillary 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. Bakhtiarzadeh, K. Kamali Aliabad, S. Sepahvand. Plant Genome Evolution Congress. (2015), Amesterdam
- 2022
- Comparison of direct and indirect rooting rates between two high bush blueberry cultivars (*Vaccinium corymbosum* L.). **B. Hosseinpour**. 17th National and 3rd International Iranian Crop Science Congress.
- 2022
- Effect of different concentrations of Sequestrene on high bush blueberry (*Vaccinium corymbosum* L.) micropropagation. **B. Hosseinpour**. 17th National and 3rd International Iranian Crop Science Congress

## Editorial Boards and Grant Reviews

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

## Participations to National Programs

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

## Computer Skills

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- Professional Softwares related to Genetics**
- SPSS, DNA Star, VNTI, Primer3plus, Oligo, Beacon
  - R; SAS; RNA seq data analysis; Linux

## Experimental Skills

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

## Fields of Interests

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- 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**

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**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