Masoud AHMADI-AFZADI

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Personal Statement

I am an early career academic with a research interest in 'plant breeding and biotechnology'. I am very eager to expand my knowledge, and thus very enthusiastic to work in teamwork where I can use my skills.

Educational Background

2016-now	Researcher/Lecturer at Plant Biotechnology Department, Graduate University of Advanced Technology, Kerman, Iran.
Mar-Sep 2015	Short-term Postdoc in Plant Breeding Department, Swedish University of Agricultural Sciences, Alnarp, Sweden. Supervisor: Prof. Hilde Nybom
Project title	Genome Wide Association study of apple fruit to postharvest decay.
2010-2015	PhD in Plant Biotechnology, Swedish University of Agricultural Sciences, Sweden. Supervisor: Prof: Hilde Nybom
PhD title	Genetic variation in resistance to fungal storage diseases in apple; Inoculation-based screening, transcriptomics and biochemistry
2003-2006	MSc in Agricultural Biotechnology, Isfahan University of Technology, Isfahan, Iran **GPA: 17.05 out of 20**
M.Sc. title	Use of amplified fragment length polymorphism (AFLP) for genetic diversity analysis among some cultivars of Iranian pistachio (*Pistacia vera* L.)
1999-2003	BS in Agronomy and Plant Breeding, Shahid Bahonar University, Kerman, Iran. **GPA: 17.02 out of 20**

Honors and awards

- Awarded a 4-years PhD scholarship by the ministry of Science, Research and Technology of Iran, 2010.
- Received the first-top student award in BS at Shahid Bahonar University of Kerman, 2003.
- Received several travel grants from different Swedish Institutes.

Research Strength and interest

I have experiences in molecular techniques such as: DNA and RNA extraction, Electrophoresis, Morphological and DNA markers such as RAPD, AFLP, SSR and ISSR, plant tissue culture, selected metabolite analysis by HPLC-DAD and UV-HPLC, gene expression analysis like Microarray technique, qRT-PCR and RNA-seq analysis, Genotyping analysis with High Resolution Melting Curve (HRM) and TaqMan assay analysis and Genome Wide Association Mapping (GWAS) analysis.

I am interested in applying modern and molecular techniques to investigate different plant genomes in order to find association between markers and important traits. One of my recent projects was trying to

identify candidate genes associated to post-harvest fungal disease on apple fruits. I have also been involved in Swedish part of FruitBreedomics project to perform GWAS analysis on the above-mentioned trait.

International collaborations

- Active participation in several projects during/after PhD with Prof. Hilde Nybom, Balsgard, Sweden.
- Active collaboration in Microarray and qRT-PCR analyses with scientists in INRA, Angers, France.
- Participation in WP4 of FruitBreedomics project (GWAS analysis) with Dr. Charles-Eric Durel, France.
- Research collaboration with Dr. David Chagne, Plant and Food Research, Palmerston North, New Zealand.

Teaching Experience

I assisted in teaching a plant systematics course at Shahid Bahonar University, Iran, during 2000–2003, and was then employed as a lecturer from 2007 to 2010 at the same university. In addition, I have been an invited lecturer at Valiasr University and Payam-Nour University of Kerman.

Society and committee membership

- International Society for Horticultural Science (ISHS)
- Agricultural and Natural Resources Engineering Organization (ANREO)
- Iranian Biotechnology Society.

Computer Skills

- Proficiency in using genetics-based softwares, like NTsys, Oligo, alignment and NCBI tools, primer designing tools, Blast2GO, Genesis, FlapJack, PLINK, TASSEL, and also several statistical packages such as Minitab, SAS, and R package.
- Proficiency in commonly used softwares such as Microsoft Word, PowerPoint, Excel and Photoshop.

Extracurricular Activities

Nature photography, reading novels. playing table tennis, football and volleyball.

References

1. **Prof. Hilde Nybom,**
   Balsgård–Plant Breeding Department, Swedish University of Agricultural Sciences, Sweden
   hilde.nybom@slu.se
2. **Prof. Francious Laurens,**
   IRHS, UMR1345, INRA, AGROCAMPUS–Ouest, Université d'Angers, Beaucouzé, France
   francois.laurens@angers.inra.fr
3. **Kr. Kimmo Rumpunen** Balsgård–Plant Breeding Department, Swedish University of Agricultural Sciences, Sweden
   kimmo.rumpunen@slu.se

Publications

1- **Ahmadi-Afzadi, M.**, Rumpunen K., Ekholm A., Renou J.P., Orsel M., Pelletier S., Bruneau M., Tahir I. and H. Nybom. 2016. Genetics of resistance to blue mould in apple; Inoculation-based screening, transcriptomics and biochemistry. *Acta Hort*, 1127: 55-60.

2- Nybom, H., Røen D., Karhu S., Garkava-Gustavsson L., Tahir I., Haikonen T., Røen K., **Ahmadi-Afzadi M.**, Ghasemkhani M. and S.H. Hjeltnes. 2016. Prebreeding for future challenges in nordic apples; Susceptibility to fruit tree canker and storage diseases. *Acta Hort*, 1127: 117-123.

3- **Ahmadi-Afzadi, M.**, Nybom H., Ekholm A., Tahir I. and K. Rumpunen. 2015. Biochemical contents of apple peel and flesh affect level of partial resistance to blue mold. *Postharvest Biol Tec.* 110: 173.182.

4- Tahir, I., Nybom H., **Ahmadi-Afzadi M.**, Røen K. Sehic J. and D. Røen. 2015. Susceptibility to blue mold caused by *Penicillium expansum* in apple cultivars adapted to a cool climate. *Eur. J. Hortic. Sci*. 79: 218-225.

5- Ghasemkhani M., Sehic J., **Ahmadi-Afzadi M.**, Nybom H. and L. Garkava-Gustavsson. 2015. Screening for partial resistance to fruit tree canker in apple cultivars. *Acta Hort*. 687-690.

6- Tahir, I., **Ahmadi-Afzadi M.**, Nybom H., and E.S. Dey. 2014. Rye bran alkylresorcinols inhibit growth of *Penicillium expansum* and *Neofabraes prennans* in vitro and in vivo on different apple cultivars. *Eur. J. Hortic. Sci.* 79: 218-225.

7- **Ahmadi-Afzadi, M.**, Tahir I. and H. Nybom 2013. Impact of harvesting time and fruit firmness on the tolerance to fungal storage diseases in an apple germplasm collection. *Postharvest Biol Tec*. 82: 51-58.

8- Dey E.S., **Ahmadi-Afzadi M.**, Nybom H. and I. Tahir. 2013. Alkylresorcinols isolated from rye bran by supercritical fluid of carbon dioxide and suspended in a food-grade emulsion show activity against *Penicillium expansum* on apples. *Arch Phytopathology Plant Protect*. 46: 105-119.

9- Nybom H., **Ahmadi-Afzadi M.**, Sehic J. and M. Hertog. 2013. DNA marker-assisted evaluation of fruit firmness at harvest and post-harvest fruit softening in a diverse apple germplasm. *Tree Genet Genomes*. 9: 279-290.

10- Nybom H., **Ahmadi-Afzadi M.**, Garkava-Gustavsson L., Sehic J. and I. Tahir. 2012. Selection for Improved Fruit Texture and Storability in Apple. *Acta Hort.* 934: 849-854.

11- Kellerhals M., Szalatnay D., Hunziker K., Duffy B., Nybom H., **Ahmadi-Afzadi M.**, Höfer M., Richter K. and M. Lateur. 2012. European pome fruit genetic resources evaluated for disease resistance. *Trees*. 26: 179-189.

12- Dehghan Noudeh G., Khazaeli P., Behravan E., **Ahmadi Afzadi M.,** Dehghan-Noodeh A., M. Hassani. 2011. Evaluating the toxicity of permeability enhanchers of polyethylene glycol brij ethers surfactants group on cellular membranes and some of their physicochemical properties. *Afr. J Biotechnol*. 10: 9931-9938.

13- Dehghan Noudeh G., Sharififar F., Dehghan Noodeh A., Moshafi M.H., **Ahmadi Afzadi M.**, Behravan E., Aref M. and R. Sakhtianchi. 2010. Antitumor and antibacterial activity of four fractions from *Heracleum persicum* Desf. and *Cinnamomum zeylanicum* Blume. *J. Med. Plant Res.* 4: 2176-2180.

14- Dehghan Noudeh G., Moshafi M.H., Behravan E., **Ahmadi Afzadi M.**, M. Sodagar. 2010. Investigation of cellular hydrophobicity and surface activity effects of biosynthesed biosurfactant from broth media of PTCC 1561. *J Microbiol Biotechnol*. 4: 1814-1822.

15- Dehghan Noudeh G., Dehghan Noodeh A., Moshafi M.H., **Ahmadi Afzadi M.,** Pardakhti A., M. Salandari. 2010. Investigating the effects of various additives on surface activity and emulsification index of biosurfactant resulting from broth media of *Bacillus subtilis* PTCC 1023. *Afr. J Microb. Res*. 4: 1981-1990.

16- Dehghan Noudeh G., Sharififar F., Khatib M., Behravan E. and **M**. **Ahmadi Afzadi.** 2010. Study of aqueous extract of three medicinal plants on cell membrane–permeabilizing and their surface properties. *Afr. J Biotechnol.* 9: 110-116.

17- Dehghan-Noudeh G., Moshafi M.H., Torkzadeh S., Behravan E. and **M. Ahmadi Afzadi.** 2009. Screening three strains of *Pseudomonas aeruginosa*: Prediction of biosurfactant-producer strain. *American J Appl Sci*. 6: 1453-1457.

18- **Ahmadi Afzadi M.**, Sayed Tabatabaei B.E., Mohammadi S.A. and A. Tajabadipur. 2007. Comparison of genetic diversity in species and cultivars of pistachio (*Pistacia* sp. L.) based on Amplified Fragment Length Polymorphism (AFLP) markers. *Iranian J of Biotechnol.* 5: 147-152.

Conference papers

1- Nybom, H., D. Roen, S. Karhu, **M. Ahmadi-Afzadi**, J. Sehic, I. Tahir, L. Garkava-Gustavsson, T. Haikonen, K. Roen, M. Ghasemkhani and S.H. Hjeltnes. The holy grail for plant geneticists: good phenotyping data! 8th International Rosaceae Genomics Conference, 21-24 June 2016. Angers, France. Poster presentation.

2- **Ahmadi-Afzadi, M.** and H. Nybom. Methyl jasmonate inhibits the blue mold development in apple fruits. The XIV International Eucarpia Symposium on Fruit Breeding and Genetics, 14-18 June 2015. Bologna, Italy. Poster presentation.

3- **Ahmadi-Afzadi, M.**, Rumpunen K., Ekholm A., Renou J.P., Orsel M., Pelletier S., Bruneau M., Tahir I. and H. Nybom. Genetics of Resistance to Blue Mould in Apple; Inoculation-Based Screening, Transcriptomics and Biochemistry. 29th International Horticultural Congress, 17-22 August 2014. Brisbane, Australia. Oral presentation.

4- **Ahmadi-Afzadi, M.**, K. Rumpunen, M. Orsel, S. Pelletier, J.P. Renou and H. Nybom. Are differentially expressed genes associated with contents of some chemical compounds in apple fruit challenged with *Penicillium expansum*? 7th International Rosaceae Genomic Conference, 24-26 June 2014. Seattle, USA. Poster presentation.

5- **Ahmadi-Afzadi, M.**, M. Bruneau, J.P. Renou, S. Pelletier and H. Nybom. cDNA microarray analysis for identification of differentially expressed genes in apple cultivars in response to *Penicillium infection*. 10th international congress of plant pathology, 25-30 August 2013. Beijing, China. Poster presentation.

6- **Ahmadi-Afzadi, M.**, I. Tahir, E. Dey and H. Nybom. Alkylresorcinols (AR) isolated from rye bran can protect apples from fungal storage diseases. VIPCA Plant Genetics and Breeding Technologies, 18-20 February 2013. Vienna, Austria. Poster presentation.

7- Nybom H., J. Sehic, I. Tahir, M. Hertog and **M**. **Ahmadi-Afzadi.** Apple quality: relationships among fruit maturation, fruit firmness at harvest, post-harvest fruit softening and susceptibility to storage diseases. Sixth Rosaceous Genomics Conference. 30 Sep-4 Oct 2012. Trento, Italy. Poster presentation.

8- Ghasemkhani M., J. Sehic, **M. Ahmadi-Afzadi**, H. Nybom and L. Garkava-Gustavsson. Screening for partial resistance to fruit tree canker in apple cultivars. 2nd symposium on horticulture in Europe. 1-5 July 2012. Angers, France. Poster presentation.

9- **Ahmadi-Afzadi M.**, I. Tahir, E. Dey, H. Nybom. Resistance and Protection of Apples from Storage Disorders. 2nd symposium on horticulture in Europe. 1-5 July 2012. Angers, France. Poster presentation.

10- **Ahmadi-Afzadi M.,** I. Tahir, J. Sehic, H. Nybom. Is tolerance to *Penicillium expansum* associated with ripening date and fruit firmness in apple? XIII Eucarpia Symposium on Fruit Breeding and Genetics. 11-15 September 2011. Warsaw, Poland. Poster presentation.