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Personal details

Nationality: Iranian
Place of birth: Roodsar, Iran
Date of birth: 23.09.1979
Gender: Male
Marital status: Married (2 Children)

Professional records

01/2020 – **Assistant Professor**
now Medicinal Plant Research Division, Research Institute of Forests and Rangelands,
Tehran, Iran
Activities: 100% Research

05/2019 – **Researcher and scientific consultant**
now Quality control ward, Tolid Mavade Avallieh Daroupakhsh (Temad) Company, Karaj,
Iran
Topic: improvement of extraction methods of alkaloids from plant and extracted sap
of *Papaver somniferum*, and developing HPLC methods for measuring *P. somniferum*
and *P. bracteatum* Alaklaoid contents

05/2019 – **Researcher**
now Institute for Plant Biology
Technische Universität Braunschweig, 4 Mendelssohnstr, 38106 Braunschweig,
Germany
Topic: Horizontal natural product transfer

01/2015 – **Teacher Assistant**
08/2017 Institute for Plant Biology

Technische Universität Braunschweig, 4 Mendelssohnstr, 38106 Braunschweig, Germany

Topic: Supporting undergraduate and graduate students in their thesis, and also teaching students how they could analyze their samples with different chromatography systems.

- 09/2016 – **Internship** (Supported by Professor Robert Hänsch)
12/2016 Institute for Plant Biology, Technische Universität Braunschweig, 1 Humboldtstr, 38106 Braunschweig, Germany
Topic: Measuring the transcriptome of stylopine synthase gene in different *Chelidonium majus* treated plants
- 05/2016 – **Internship** (Stipend from Kyoto University and TU Braunschweig, supported by
07/2016 Professor Fumihiko Sato and Professor Dirk Selmar)
Laboratory for Molecular and Cellular Biology of Totipotency, Graduate School of Biostudies, Kyoto University, Oiwakecho, Kitashirakawa, Sakyo, Kyoto 606-5802, Japan.
Topic: Cloning and characterization of benzyloquinoline alkaloids occurring in *Chelidonium majus*
- 06/2015 – **Internship** (Supported by Doctor Florian Bittner)
12/2015 Department of Plant Biology, Technische Universität Braunschweig, 1 Humboldtstr, 38106 Braunschweig, Germany
Topic: Cloning of P450 genes in different vectors and introducing them in different Bacteria strains
- 06/2015 – **Internship** (Supported by Doctor Gerold Jerz)
08/2017 Institute of Food Chemistry, Technische Universität Braunschweig, 20 Schleinitzstr, D-38106 Braunschweig.
Topic: Purification of *Catharanthus roseus* alkaloid extract by countercurrent chromatography

Education

- PhD*:** **Plant Biology** Aug. 2013 - Jul 2017
Technische Universität Braunschweig, 38106 Braunschweig, Germany
Grade point average: Very Good
Dissertation: Impact of abiotic stress on alkaloid biosynthesis
Supervisor: Professor Dirk Selmar
- MSc*:** **Agricultural Engineering - Horticulture Science**, Sep. 2004 - Jan 2007
Tarbiat Modares University, Tehran, Iran
Grade point average: 16.88/20
Thesis: Effect of Some Essential Oils to Increase the Shelf-life of Postharvest Orange Fruits CVs "Thomson navel and Valencia"
Supervisor: Professor Reza Omidbaigi
- BSc*:** **Agricultural Engineering - Plant Products**, Sep. 1998 - Sep. 2000
Noshahr and Chalous Branch of Islamic Azad University, Chalous, Iran
Grade point average: 17.18/20
- AD*:** **Orchard and Farming Affairs - Orchard Products Technology**, Sep. 1996 - Sep. 1998
Tonekabon Agricultural Higher Education Institute, Tonekabon, Iran
Grade point average: 17.11/20

Honors and awards:

- 48-month scholarship for Ph.D. awarded by Iranian Ministry of Science, Research and Technology, Tehran, Iran, 08.2013 - 02.2017
- A noticeable prize was awarded by the Iranian Nano Committee to me for writing an article in the nano field, Iran, 2009.

- I successfully passed the nationwide M.Sc. entrance and ranked 12 among more than 1500 applicants, Iran, 2004.

Related Experiences:

- Cloning of P450 genes in different vectors: cooperation with Institute for Plant Biology, TU Braunschweig, Humboldt Strasse. 1, 38106 Braunschweig, Germany, July 2015 – December 2015.
- Heterologous expression of P450 genes in yeast: cooperation with Laboratory for Molecular and Cellular Biology of Totipotency, Graduate School of Biostudies, Kyoto University, Kyoto, Japan, May 2016 – July 2016.
- Measuring stylophine synthase gene expression in treated *C. majus* plant by qRT-PCR: Cooperation with Institute for Plant Biology, Technische Universität Braunschweig, 1 Humboldtstr, 38106 Braunschweig, Germany, September 2016 – December 2016.
- Purification of *Catharanthus roseus* alkaloids by Counter Current Chromatography (CCC), HPLC-Preparative and silica columns, and characterization of purified alkaloid by different chromatography equipment (TLC, HPLC-DAD, LC-MS, LC-MS/MS, GC-MS), polarimeter, NMR and X-ray: cooperation with Institute of Food Chemistry, Technische Universität Braunschweig, 20 Schleinitzstr, D-38106 Braunschweig July 2015 – August 2017
- Handling plants in a controlled climate, Ph.D. Braunschweig, Germany, 2017.
- Horizontal natural product transfer project cooperation with Institute for Plant Biology, TU Braunschweig, Mendelssohn Strasse. 4, 38106 Braunschweig, Germany, January 2016 – August 2016.

Language proficiency

- Persian: Native
- English: Fluent in speaking and writing. (TOEFL Score (PBT): 553, attended on 08/12/2012)
- German: Basic knowledge
- Arabic: Basic knowledge

IT skills

- Maestro
- Chimera
- Autodock Vina
- ChemBioOffice
- SAS
- SPSS
- BioEdit Sequence Alignment Editor
- MEGA7: Molecular Evolutionary Genetics Analysis
- Microsoft Office and Origin

References

- **Prof. Dirk Selmar**
Institute for Plant Biology, Technische Universität Braunschweig, Mendelssohnstraße. 4,
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Tel: +49 531 391 5881
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<https://www.tu-braunschweig.de/ifp/selmar/mitarbeiter>

- **Prof. Robert Hänsch**

Institute for Plant Biology, Technische Universität Braunschweig, Humboldtstraße. 1,
38106 Braunschweig, Germany

Tel: +49 531 391 5867

Fax: +49 531 391 8208

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<http://www.ifp.tu-bs.de/mendel/index.php/arbeitsgruppen/haensch>

- **Dr. Florian Bittner**

Julius Kühn Institute - Federal Research Centre for Cultivated Plants, Erwin-Baur-Straße
27, 06484 Quedlinburg, Germany

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- **Dr. Gerold Jerz**

Institute of Food Chemistry, Technische Universität Braunschweig, Schleinitzstraße 20,
38106 Braunschweig, Germany

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مؤسسه تحقیقات جنگلها و مراتع کشور

Peer-reviewed publications:

1. **Yahyazadeh, M.**, Selmar, D., Winterhalter, P., Jerz, G. (2022). Mass-Spectrometry Guided Recovery Monitoring of Indole Alkaloids in Leaves of *Catharanthus roseus* by High-Performance Countercurrent Chromatography Fractionation. **Molecules**. In press. **Impact factor: 4.411**
2. **Yahyazadeh, M.**, Jerz, G., Winterhalter, P., Selmar, D. (2021). The complexity of sound quantification of specialized metabolite biosynthesis: The stress related impact on the alkaloid content of *Catharanthus roseus*. **Phytochemistry**. 187: 112774. [DOI: 10.1016/j.phytochem.2021.112774](https://doi.org/10.1016/j.phytochem.2021.112774). **Impact factor: 4.072**
3. Selmar, D., Radwan, Hijazin, T., Abouzeid, S., **Yahyazadeh, M.**, Lewerenz, L., Kleinwächter, M., Nowak, M. (2019). Horizontal natural product transfer and allelopathy: Intriguing insights in newly discovered phenomenon. **Journal of Agricultural and food chemistry**. 67(32): 8740- 8745. [DOI: 10.1021/acs.jafc.9b03619](https://doi.org/10.1021/acs.jafc.9b03619) **Impact factor: 5.279**
4. **Yahyazadeh, M.**, Meinen, R., Hänsch, R., Abouzeid, S., Selmar, D. (2018). Impact of drought and salt stress on the biosynthesis of alkaloids in *Chelidonium majus* L. **Phytochemistry**. 152:204-2012. [DOI: 10.1016/j.phytochem.2018.05.007](https://doi.org/10.1016/j.phytochem.2018.05.007). **Impact factor: 4.072**
5. Abouzeid, S., Beutling, U., Surup, F., Abdel Bar, F., Amer, M., Badria, F., **Yahyazadeh, M.**, Brönstrup, M., Selmar, D. (2017). Treatment of *Vinca minor* leaves with methyl jasmonate extensively alters the pattern and composition of indole alkaloids. **Journal of Natural Products**. 80: 2905-2909. [DOI: 10.1021/acs.jnatprod.7b00424](https://doi.org/10.1021/acs.jnatprod.7b00424). **Impact factor: 4.050**
6. **Yahyazadeh, M.**, Purwanto, P., Bittner, F., Sato, F., Selmar, D. (2017). Cloning and characterization of cheilanthifoline and stylophine synthase genes from *Chelidonium majus*. **Plant and Cell Physiology**. 58: 1421–1430. [DOI: 10.1093/pcp/pcx077](https://doi.org/10.1093/pcp/pcx077). **Impact factor: 4.927**
7. **Yahyazadeh, M.**, Nowak, M., Kima, H., Selmar, D. (2017). Horizontal Natural Product Transfer: - A Potential Source of alkaloidal contaminants in phytopharmaceuticals. **Phytomedicine**. 34: 21–25. [DOI: 10.1016/j.phymed.2017.07.007](https://doi.org/10.1016/j.phymed.2017.07.007). **Impact factor: 5.34**
8. **Yahyazadeh, M.**, Jerz, G., Selmar, D., Winterhalter, P., Jones, P. (2017) Crystal Structure of Akuammicine a Genuine Indole Alkaloid of *Catharanthus roseus*. **Acta Crystallographica E**. E73, 1658–1661. [DOI: 10.1107/S2056989017014529](https://doi.org/10.1107/S2056989017014529). **Impact factor: 0.413**
9. Paulsen J, **Yahyazadeh M**, Hänsel S, Kleinwächter M, Ibrom K, and Selmar D. (2015) 13,14-dihydrocoptisine--the genuine alkaloid from *Chelidonium majus*. **Phytochemistry**, 111: 149-153. [DOI: 10.1016/j.phytochem.2015.01.006](https://doi.org/10.1016/j.phytochem.2015.01.006). **Impact factor: 4.072**
10. **Yahyazadeh, M.**, Zare, R., Omidbaigi, R., Faghihi-Nasiri, M., and Abbasi, M. (2009) Control of *Penicillium* decay on citrus fruit using essential oil vapours of thyme or clove inside polyethylene and nano-clay polyethylene films. **Journal of Horticulture Science & Biotechnology**, 84(4): 403-409. [DOI:10.1080/14620316.2009.11512540](https://doi.org/10.1080/14620316.2009.11512540). **Impact factor: 1.48**

11. **Yahyazadeh, M.**, Omidbaigi, R., Zare, R., and Taheri, H. (2008) Effect of some essential oils on mycelial growth of *Penicillium digitatum* Sacc. **World Journal of Microbiology and Biotechnology**, 24: 1445-1450. [DOI:10.1007/s11274-007-9636-8](https://doi.org/10.1007/s11274-007-9636-8). **Impact factor: 3.312**

12. Omidbaigi, R., **Yahyazadeh, M.**, Zare, R., and Taheri, H. (2007) The In Vitro Action of Essential oils on *Aspergillus flavus*. **Journal of Essential oil-Bearing Plants**, 10(1): 46-52 [DOI:10.1080/0972060X.2007.10643518](https://doi.org/10.1080/0972060X.2007.10643518). **Impact factor: 1.699**

Book chapter:

1. Lewerenz, L., **Yahyazadeh, M.**, Hijazin, T., Selmar, D., (2022) Horizontal Natural Product Transfer: The Origin of the Widespread Alkaloidal Contaminations of Herbal Products. In preparation.
2. **Yahyazadeh, M.**, Abouzeid, S., Lewerenz, L., Hijazin, T., Selmar, D. (2022) Impact of Aridity on Specialized Metabolism: How Drought Stress Enhances the Concentration of Natural Products in Medicinal Plants. In preparation.
3. Abouzeid, S., Lewerenz, L., **Yahyazadeh, M.**, Radwan, A., Hijazin, T., Kleinwächter, M., Selmar, D. (2022). Favorable Impacts of Drought Stress on the Quality of Medicinal Plants - Improvement of Composition and Content of their Natural Products. In: Environmental Challenges and Solutions. Springer. Pp: 105-131. [ISBN: 978-3-030-92049-4](https://doi.org/10.1007/978-3-030-92049-4)
4. Hijazin, T., Lewerenz, L., **Yahyazadeh, M.**, Selmar, D. (2022). Horizontal Natural Product Transfer: A Phenomenon which is Responsible for the Widespread Alkaloidal Contaminations of Herbal Products. In: Environmental Challenges and Solutions. Springer. Pp:183-201. [ISBN: 978-3-030-92049-4](https://doi.org/10.1007/978-3-030-92049-4)
5. Selmar, D., Abouzeid, S., Radwan, A., Hijazin, T., Lewerenz, L., **Yahyazadeh, M.**, Nowak, M., Kleinwächter, M. (2020). Horizontal Natural Product Transfer - A Novel Attribution in Allelopathy. In: Merillon, Jean-Michel, Ramawat, Kishan Gopal (Eds.) (eds.) Reference Series in Phytochemistry. Co-Evolution of Secondary Metabolites. Springer Nature Switzerland AG. pp: 429-439. [ISBN:978-3-319-96398-3](https://doi.org/10.1007/978-3-319-96398-3)
6. Selmar, D., Kleinwächter, M., Abouzeid, S., **Yahyazadeh, M.**, Nowak, M. (2017). The impact of drought stress on the quality of spice and medicinal plants. In: Ghorbanpour, M., Varma, A. (eds.) Medicinal Plants and Environmental Challenges. Springer, New York. pp: 159-176. [ISBN: 978-3-319-68717-9](https://doi.org/10.1007/978-3-319-68717-9)
7. Nowak, M., **Yahyazadeh, M.**, Lewerenz, L., Selmar, D. (2017). Horizontal natural product transfer: A so far unconsidered source of contamination of medicinal plants. In: Ghorbanpour, M., Varma, A. (eds.) Medicinal Plants and Environmental Challenges. Springer, New York. pp: 215-226. [ISBN: 978-3-319-68717-9](https://doi.org/10.1007/978-3-319-68717-9)

presentations:

- Research Institute of Forests and Rangelands, Tehran, Iran, (15th August 2018)
- Faculty of Agriculture, Department of Horticultural Science, Faculty of Agriculture, Tehran University, Tehran, Iran, (12th October 2017)
- Faculty of Agriculture, Department of Horticultural Science, Faculty of Agriculture, Tehran University, Tehran, Iran, (2nd December 2012)

- Faculty of Agriculture, Tarbiat Modares University, Tehran, Iran, (9th September 2006)
- Faculty of Agriculture, Tarbiat Modares University, Tehran, Iran, (10th Jun 2006)

Conferences (Oral presentations):

1. **Yahyazadeh, M.**, Sato, F, and Selmar, D. (2016). Cloning and characterization of cheilanthifoline and stylopine synthase genes from *Chelidonium majus*. (Oral presentation) In: Natural Products. Meisdorf, Germany September 11-13, 2016, Deutsche Botanische Gesellschaft, Germany.
2. **Yahyazadeh, M.**, Omidbaigi, R., Zare, R, and Taheri, H. (2007) Study the potential of thyme and sage essential oils for controlling citrus decay caused by *Penicillium italicum* in Orange Fruits cv “Thomson navel” 5th Iranian Horticultural Sciences Congress, 3-6 September 2007, Shiraz University, Shiraz, **Iran**.

Conferences (Posters):

1. **Yahyazadeh, M.**;Asadi-Sanam, S.;Jaimand, K.;Hadi, N. (2022). Identification of P450 Enzyme Gene Responsible for Stylopine Alkaloid Synthase in Greater Celandine (*Chelidonium majus* L.) by Transgenic *Pichia pastoris* Yeast. National Congress on Medicinal Plants. 80-80
2. makkizadeh tafti, m., Fekri Qomi, S., Sefidkon, F., Hadi, N., Sharifi Ashoorabadi, E., **Yahyazadeh, M.** (2022). Effect of Seed Position on Mother Plant on Percentage of Emergence, Vigor and Some Characteristics Related to Asafoetida (*Ferula Assa-Foetida* L.) Seeds. National Congress on Medicinal Plants. 85-85
3. Jaimand, K., rezaee, m., Azimi atergeleh, R., Fekri Qomi, S., **Yahyazadeh, M.**, karimi, s., Hatami, F., (2022). Extraction of Phenyl ethyl alcohol from distilled water of *Rosa damascena* Mill.. National Congress on Medicinal Plants . 81-81
4. Jaimand, K.; Abdi Ghazijahani, A.;rezaee, m.;Azimi atergeleh, R.;Fekri Qomi, S.;Rahimifard, **M.;Yahyazadeh, M.**;karimi, s. (2022). Investigation of Essential Oils of *Rosa damascena* Mill. in East Azarbaijan Province . national Congress on Medicinal Plants. 82-82
5. Asadi-Sanam, S.;Jebelli, M.;nadery, b.;layeghhaghighi, m.;Kouhjani Gorji, M.;**Yahyazadeh, M.** (2022). Changes in Phenolic Compounds and Photosynthetic Pigments of *Echinacea purpurea* L. under Different Fertilizer Sources. National congress on medicinal plants. 96-96
6. Hadi, N.;Milo?,N.;Sefidkon, F.;Shojaeiyan,A.;?iler,B.; **Yahyazadeh, M.** (2022). *Nepeta* spp. as promising antimicrobial agents. 9th National Congress on Medicinal Plants. 101-101
7. **Yahyazadeh, M.**, Selmar, D., Winterhalter, P, and Jerz, G. (2018). Mass-spectrometry guided recovery monitoring of indole alkaloids in leaves of *Catharanthus roseus* by high-performance countercurrent chromatography fractionation (Poster): CCC2018, Braunschweig, Germany, August 1-3, 2018. **Germany**.
8. **Yahyazadeh, M.**, Omidbaigi, R., Zare, R., and Taheri, H. (2007) Study the effect of thyme essential oil on the morphology of *Penicillium digitatum* hyphae by Scanning Electron Microscopy. 5th Iranian Horticultural Sciences Congress, 3-6 September, Shiraz University, Shiraz, **Iran**.

9. **Yahyazadeh, M.**, Omidbaigi, R., Taheri, H, and Zare, R. (2006) The effect of some essential oils against the growth of *Penicillium digitatum* and *Aspergillus flavus* 17th Iranian Plant Protection Congress, 2-5 September, Campus of Agriculture and Natural Resource, University of Tehran, Karaj, **Iran**.
10. **Yahyazadeh, M.**, Zare, R., Omidbaigi, R., and Faghihi-Nasiri, M. (2006) Importance of plant essential oils for controlling of postharvest citrus decay 1th National Citrus Congress, 10-12 January. Sari University, Sari, **Iran**.

