



Iranian Research Institute of Plant Protection (IRIPP) CURRICULUM VITAE

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Academic qualifications

Post-doc: (2010-2014) Ghent University, Belgium, Faculty of Bioscience Engineering.

PhD: (2004-2009) Ghent University, Belgium, Faculty of Bioscience Engineering.

Thesis title: Resistance mechanisms for methoxyfenozide: *in vitro* and *in vivo* approaches. Promoter: Prof. Guy Smagghe (Lab. of Agrozoology)

MSc: (1999-2001) Agricultural Entomology, University of Tehran, Karaj Agricultural Faculty, Karaj, Iran.

BSc: (1991-1995) Agricultural Engineering in Plant Protection, Shahid Chamran University of Ahwaz, Faculty of Agriculture, Ahwaz, Iran.

Research interests:

- Insecticide resistance
- Toxicology and mode of action of insecticides/acaricides
- Physiology of insect molting and metamorphosis
- Pollinator insects

Selected research projects:

- 1- Tabrizian, M. and Mosallanejad, H. (2012). Synthesis of sex pheromone of pistachio twig borer, *Kermania pistaciella* (Lep. Tineidae) with field evaluation, compared to the imported samples.

- 2- Mosallanejad, H. (2013). Synthesis of sex pheromone of the Leopard moth, *Zeuzera pyrina* (Lep.: Cossidae) with field evaluation, compared to the imported samples.
- 3- Mosallanejad, H. (2015). Susceptibility of different Iranian populations of the cotton bollworm, *Helicoverpa armigera* to some insecticides.
- 4- Mosallanejad, H. (2019). A field efficacy evaluation of diazinon (EC60%) insecticide from companies applied to re-registration in Iran, against grape berry moth, *Lobesia botrana*.
- 5- Mosallanejad, H. (2020). A field efficacy to evaluate methoxyfenozide insecticide against Grape berry moth, *Lobesia botrana*.
- 6- Mosallanejad, H. (2019). Susceptibility of some Iranian populations of the greenhouse whitefly (*Trialeurodes vaporariorum*) to imidacloprid, acetamiprid and thiacloprid+deltamethrin insecticides.
- 7- Mosallanejad, H. (2021). Susceptibility of western flower thrips (*Frankliniella occidentalis*) to abamectin, dichlorvos and spinosad insecticides in cucumber and tomato greenhouses of some Iranian provinces.
- 8- Mosallanejad, H. (2022). An investigation on insecticide resistance of the cabbage aphid (*Brevicoryne brassicae*) to imidacloprid and pirimicarb insecticides in canola crop in some Iranian provinces.
- 9- Mosallanejad, H. (2020). An investigation on the effects of two adjuvants (Scorch and Torpedo II) on efficiency of imidacloprid and flonicamid to control of *Aphis gossypii* aphid in cucumber in greenhouse.
- 10- Mosallanejad, H. (2023). An investigation on the efficacy of new insecticide Afidopyropen (Inscalis®) on the green peach aphid, *Myzus persicae* in some Iranian provinces.
- 11- Evaluation of the efficacy of the recommended insecticides against the codling moth, (*Cydia pomonella* L.), with emphasis on the insecticide resistance in two autumn apple cultivars (Red and Golden Delicious).
- 12- Investigation of insecticide resistance of the onion thrips, (*Thrips tabaci*) in some Iranian provinces

Extension activities:

Holding educational workshop and courses for executive experts:

- 1) Importance of insecticide resistance and its management strategies.
- 2) Classification of insecticides/acaricides (IRAC) for rotation use and resistance management purposes.

Selected publications:

- 1- Mosallanejad, H., Soin, T., Smaghe, G. (2008). Selection for resistance to methoxyfenozide and 20-hydroxyecdysone in cells of the beet armyworm, *Spodoptera exigua*. Archives of Insect Biochemistry and Physiology 67, 36-49.

- 2- **Mosallanejad, H.**, Soin, T., Swevers, L., Iatrou, K., Nakagawa, Y., Smagghe, G. (2008). Non-steroidal ecdysteroid agonist chromafenozide: gene induction activity, cell proliferation inhibition and larvicidal activity. *Pesticide Biochemistry and Physiology* 92, 70-76.
- 3- Swevers, L., Soin, T., **Mosallanejad, H.**, Iatrou, K., Smagghe, G. (2008). Ecdysteroid signaling in ecdysteroid-resistant cell lines from the polyphagous noctuid pest *Spodoptera exigua*. *Insect Biochemistry and Molecular Biology* 38 (9), 825-833.
- 4- Soin, T., Swevers, L., **Mosallanejad, H.**, Efroze, R., Labropoulou, V., Iatrou, K., Smagghe, G. (2008). Juvenile hormone analogs do not affect directly the activity of the ecdysteroid receptor complex in insect culture cell lines. *Journal of Insect Physiology* 54, 429-438.
- 5- **Mosallanejad, H.** and Smagghe, G., (2009). Biochemical mechanisms of methoxyfenozide-resistance in the cotton leafworm *Spodoptera littoralis* (Lepidoptera: Noctuidae), *Pest Management Science*. 65 (7), 732-736.
- 6- **Mosallanejad H**, Badisco L, Swevers L, Soin T, Knapen D, Broeck JV, Smagghe G., (2010). Ecdysone signaling and transcript signature in *Drosophila* cells resistant against methoxyfenozide. *Journal of Insect Physiology* 56, 1973–1985.
- 7- Soin T, De Geyter E, **Mosallanejad H**, et al., (2010). Assessment of species specificity of moulting accelerating compounds in Lepidoptera: comparison of activity between *Bombyx mori* and *Spodoptera littoralis* by *in vitro* reporter and *in vivo* toxicity assays. *Pest Manag Sci.*; 66(5): 526-35.
- 8- Zaker, M., and Mosallanejad, H. (2010). Antifungal activity of some plant extracts on *Alternaria alternata*, the causal agent of alternaria leaf spot of potato. *Pakistan Journal of Biological Sciences*, 13 (21), 1023-1029.
- 9- Mommaerts V, Hagenars A, Meyer J, De Coen W, Swevers L, **Mosallanejad H**, Smagghe G., (2011). Impact of a perfluorinated organic compound PFOS on the terrestrial pollinator *Bombus terrestris*. *Ecotoxicology*, 20(2):447-456.
- 10- Meeus I, Mommaerts V, Billiet A, **Mosallanejad H**, Van de Wiele T, Wäckers F, Smagghe G. (2013). Assessment of mutualism between *Bombus terrestris* and its microbiota by use of microcolonies. *Apidologie*, 44, 708-719.
- 11- Meeus I, **Mosallanejad H**, Niu J, de Graaf D, Waeckers F and Smagghe G. (2014). Gamma irradiation of pollen and eradication of Israeli acute paralysis virus. *Journal of invertebrate pathology*. 121, 74-77.
- 12- Parmentier, L., I Meeus, **Mosallanejad, H.**, De Graaf, DC., Smagghe, G. (2016). Plasticity in the gut microbial community and uptake of Enterobacteriaceae (Gammaproteobacteria) in *Bombus terrestris* bumblebees' nests when reared indoors and moved to an outdoor environment. *Apidologie* 47 (2), 237-250.
- 13- Sahraean, N., Bezerra, T. C., Khanaghah, K. E., **Mosallanejad, H.**, Van Ranst, E., & Moens, T. (2017). Effects of pollution on nematode assemblage structure and diversity on beaches of the northern Persian Gulf. *Hydrobiologia*, 799(1), 349-369.
- 14- Sahraean, N., Van Campenhout, J., Rigaux, A., **Mosallanejad, H.**, Leliaert, F., & Moens, T. (2017). Lack of population genetic structure in the marine nematodes *Ptycholaimellus pandispiculatus* and *Terschellingia longicaudata* in beaches of the Persian Gulf, Iran. *Marine Ecology*, 38(3), e12426.
- 15- Havasi, M., Kheradmand, K., **Mosallanejad, H.**, & Fathipour, Y. (2018). Sublethal effects of diflovidazin on life table parameters of two-spotted spider mite *Tetranychus urticae* (Acari: Tetranychidae). *International journal of acarology*, 44(2-3), 115-120.

- 16- Havasi, M., Kheradmand, K., **Mosallanejad, H.**, & Fathipour, Y. (2019). Sublethal effects of diflovidazin on demographic parameters of the predatory mite, *Neoseiulus californicus*. *International Journal of Acarology*, 45(4), 238-244.
- 17- Sayani, Z., Mikani, A., & **Mosallanejad, H.** (2019). Biochemical Resistance Mechanisms to Fenvalerate in *Plutella xylostella*. *Journal of Economic Entomology*, 112(3), 1372-1377. Q2
- 18- Havasi, M., Kheradmand, K., **Mosallanejad, H.**, & Fathipour, Y. (2020). Influence of low-lethal concentrations of thiamethoxam on biological characteristics of *Neoseiulus californicus*. *Journal of Crop Protection*, 9(1), 41-55. Q4
- 19- Sahraeian, N.; Hosseinzadeh Sahafi, H.; **Mosallanejad, H.**; Ingels, J. and Semprucci, F. (2020). Temporal and spatial variability of free-living nematodes in a beach system characterized by a gradient of anthropogenic disturbance (Bandar Abbas, Persian Gulf, Iran). *Ecological Indicators* 106697.
- 20- Havasi, M., Kheradmand, K., **Mosallanejad, H.**, & Fathipour, Y. (2020). Life history traits and demographic parameters of *Neoseiulus californicus* McGregor treated with the Biomite®. *Systematic and Applied Acarology*, 25(1), 125-138.
- 21- Hamedani Radja, K., Mikani, A., & **Mosallanejad, H.** (2020). Biochemical Resistance Mechanisms to Dimethoate in Cabbage Aphid *Brevicoryne brassicae*. *Journal of Agricultural Science and Technology*, 22(1), 187-196.
- 22- Gholami, Z., Talebi Jahromi, K., Hosseinaveh, V., & **Mosallanejad, H.** (2020). Characteristic of resistance to dichlorvos and biochemical mechanisms in the greenhouse strains of *Frankliniella occidentalis*. *Journal of Crop Protection*, 9(2), 195-207.
- 23- Hosseinzadeh Sahafi, H.; Sahraeian, N.; **Mosallanejad, H.** (2022). Ultrastructure and histology of reproductive system in free-living marine nematode (*Oncholaimus campylocercoid*) with reference to polychlorinated biphenyls (PCBs) pollution in the Persian Gulf. *Iranian Journal of Fisheries Sciences*, 21(1), 264-287.
- 24- **Mosallanejad, H.** and Broomand, A. (2021). Residual Effects of spray adjuvant, Scorch®, on efficacy of methoxyfenozide (SC24%) and spinosad (SC24%) to control the European grapevine moth, *Lobesia botrana*. *Pesticide Research Journal*. 33 (2), 111-119
- 25- **Mosallanejad, H.** and Broomand, A. (2022). Effects of a multi-functional adjuvant on efficacy of methoxyfenozide (SC24%) and spinosad (SC24%) to control the European grapevine moth, *Lobesia botrana*. *EPPO Bulletin*.
- 26- Mousavi, A., Kheradmand, K., **Mosallanejad, H.**, Fathipour, Y., Havasi, M.R. (2023). Effect of low lethal concentrations of Eforia on biological parameters of the predatory mite *Amblyseius swirskii*. *Journal of Crop Protection*, 12(1):65-77.
- 27- Shafiei, S.E., Ghadamyari, M., Mosallanejad, H. (2023). Inheritance of resistance to imidacloprid and chlorpyrifos in the greenhouse whitefly, *Trialeurodes vaporariorum* (Hemiptera: Aleyrodidae). *Journal of Entomological Society of Iran*, 42(4):255-264.
- 28- Mousavi, A., Kheradmand, K., Fathipour, Y., Mosallanejad, H., Havasi, M. (2023). The effects of the abamectin and spiroadiclofen mixture on life history and population parameters of *Amblyseius swirskii*. *Systematic and Applied Acarology*, 28(5):971-984.
- 29- Sahraeian, N., Riera, R., Mantha, G., Sahafi, H.H., Mosallanejad, H. (2024). Divergent Communities of Marine Nematodes in Impacted Beaches of Bandar Abbas (Iran). *Marine Ecology*, 45(6):-.

Conference papers:

Iranian congress

Mosallanejad, H., Bagheri Zonouz, E., Nouzari, J. & Talebi Efsanarani, M. (2002). Effect of enrichment mulberry leaves (*Morus alba*) with vitamin E on some reproductive traits of silkworm *Bombyx mori*. Proceeding of 15th Iranian plant protection congress, 7-11 September 2002, Kermanshah, Iran.

Mosallanejad, H., Soin, T. & Smagghe, G., (2006). Effect of non-steroidal ecdysone agonists on a dipteran and lepidopteran insect cell line. 17th Iranian plant protection congress. 1-4 September 2006, Karaj (Iran).

Mosallanejad, H., & Smagghe, G., (2010). Comparative analysis for ecdysteroid receptor functionality in ecdysteroid-resistant insect cell line from dipteran and lepidopteran origins. 19th Iranian plant protection congress. 31 July- 3 August 201, Tehran (Iran).

Mosallanejad, H., & Smagghe, G., (2010). Ecdysteroid resistance mechanism in a *Drosophila melanogaster* cell line, a microarray analysis. 19th Iranian plant protection congress. 31 July- 3 August 201, Tehran (Iran).

Mosallanejad, H., (2011). Use of cell culture method in toxicology, advantages and limitations. 11th International congress of the Iranian society of toxicology. Mashad (Iran).

Zarei, Z., Kavousi, A., Rahmani, H. and **Mosallanejad, H.** (2011). Lethal effect of Fenpyroximate and Propargite acaricides and their mixture on *Tetranychus urticae*. First national conference on modern agricultural sciences & technologies. Zanzan, Iran.

Sahraeian, N., **Mosallanejad, H.**, Negarestan, H and Moens, T. (2012). An investigation and identification of marine nematodes of intertidal beaches, Bandar Abbas. 17th national and 5th international Iranian biology conference. Kerman (Iran).

Sahraeian, N., **Mosallanejad, H.**, Negarestan, H and Moens, T. (2012). An investigation on fluctuation of marine nematodes in two intertidal beaches of Bandar Abbas, receiving different amount of urban pollution. 17th national and 5th international Iranian biology conference. Kerman (Iran).

Sahraeian, N., **Mosallanejad, H.**, and Moens, T. (2013). Community structure and biodiversity of marine nematodes of soft intertidal beaches of Bandar Abbas. National aquatic conference of animal science. 27-29 August 2013, Rasht, Iran.

Sahraeian, N., **Mosallanejad, H.**, and Moens, T. (2013). Effect of urban pollution on biodiversity of marine nematodes of soft intertidal beaches of Bandar Abbas. National aquatic conference of animal science. 27-29 August 2013, Rasht, Iran.

Mosallanejad, H. and Nozari, J. (2014). A review of using insect pollinators in biological control of plant pests and disease. Proceedings of the Conference of Biological Control in Agriculture and Natural Resources. 26-27 Aug. 2013, Karaj, Iran.

Sahraeian, N., **Mosallanejad, H.**, and Moens, T. (2014). Effect of urban pollution on community structure of marine nematodes of soft intertidal beaches of Bandar Abbas. First national conference of passive defense in marine sciences. 19-21 November 2014, Bandar Abbas, Iran.

Abroad congress:

Mosallanejad, H., Soin, T. & Smagghe, G., (2006). *In vitro* effects of 20-hydroxyecdysone and ecdysone agonists on *Spodoptera exigua* cell line. 58th International Symposium on crop Protection. Faculty of Bioscience Engineering, Ghent University, Ghent, Belgium, May 23, 2006.

Mosallanejad, H., Soin, T. & Smagghe, G. (2006). Selection and analysis of cell clones of Se4 resistant towards 20-hydroxyecdysone and methoxyfenozide. 16th International Ecdysone workshop. Faculty of Bioscience Engineering, Ghent University, Ghent, Belgium, 10-14 July 2006.

Smagghe, G., **Mosallanejad, H.**, Decombel, L., Goodman, C., Soin, T., (2006). Validation Analysis of an Ecdysteroid Receptor Agonist Assay Using Intact Cultured Lepidoptera Cells. *In Vitro* Biology Meeting, Minneapolis, Minnesota (USA), 3-7 June 2006.

Mosallanejad, H., Soin, T. & Smagghe, G., (2007). *In vitro* evaluation of resistance towards methoxyfenozide in cells of the beet armyworm, metabolism and kinetics. 59th International Symposium on crop Protection. Faculty of Bioscience Engineering, Ghent University, Ghent, Belgium, May 22, 2007.

Mosallanejad, H., Soin, T., Swevers, L., Iatrou, K., Smagghe, G., (2007). Acquisition of resistance towards methoxyfenozide and 20-hydroxyecdysone in cultured *Spodoptera exigua* cells and analysis in resistant subclones for underlying mechanisms. Resistance 2007, Rothamsted Research, Harpenden, UK, 16-18 April 2007.

Smagghe, G., Soin, T., **Mosallanejad, H.**, Decombel, L., Van de Velde, S., Vandenberghe, G., Ryckaert, J., Van Damme, E., Goodman, C., Caputo, G. and Swevers, L., (2007). Insect cell lines as tools for developing rational insecticides. International Congress of Insect Biotechnology & Industry, Daegu, Republic of Korea, 19-24 August 2007.

Soin, T., Swevers, L., Efröse, R., Labropoulou, V., **Mosallanejad, H.**, Iatrou, K., and Smagghe, G., (2007). The ecdysteroid receptor complex in insect cell lines is not directly affected by juvenile hormone agonists. 5th International Conference on Arthropods: Chemical, Physiological and Environmental Aspects. Białka Tatrzańska, Poland. 16-21 September 2007.

Mosallanejad, H., Soin, T., Swevers, L., Iatrou, K., Smagghe, G., (2008). Comparative analysis for ecdysteroid receptor functionality in selected lepidopteran and dipteran methoxyfenozide-resistant insect cell lines. 17th International Ecdysone workshop. Ulm University, Ulm, Germany, 20-24 July 2008.

Swevers, L., Soin, T., **Mosallanejad, H.**, Iatrou, K., Smagghe, G., (2008). Wild-type ecdysteroid receptor signaling in ecdysteroid-resistant cell lines from the polyphagous noctuid pest *Spodoptera exigua*. 17th International Ecdysone workshop. Ulm University, Ulm, Germany, 20-24 July 2008.

Soin, T., **Mosallanejad, H.**, Martín, D., Iatrou, K., Nakagawa, Y., Smagghe, G., Swevers L., (2008). Comparison of the activity of ecdysone agonists in *Bombyx mori* and *Spodopteralittoralis* by *in vitro* reporter assays and *in vivo* toxicity assays. 17th International Ecdysone workshop. Ulm University, Ulm, Germany, 20-24 July 2008.

Books:

Mosallanejad, H., Noroozian, M. and Mohamadbeigi, A. (2002). A guide booklet of important crop pests, diseases and weeds and the recommended control chemicals. Plant Protection Organization. 110 pp. (In Persian).