CURRICULUM VITAE

Seyed Ali Hemmati
Assistant Professor of Entomology (Insect Physiology & Biochemistry)
Department of Plant Protection
Faculty of Agriculture
Shahid Chamran University of Ahvaz, Ahvaz, Iran
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Personal information:

Birth Date: Sep 12th, 1986
Gender: Male
Nationality: Iranian

Interested Research Area

- ✓ Biochemistry and Molecular Biology of Insect Digestion (particularly Digestive Enzyme Inhibition)
- ✓ Rational Design of the peptide as enzyme inhibitor
- ✓ Bioinformatics
- ✓ Insect Physiology
- ✓ Protein-peptide interaction

Education and Qualifications:

- ✓ **B. Sc.:** (2005-2009) Plant Protection, Gorgan University of Agriculture and Natural Resources, Gorgan, Iran.

- ✓ **M. Sc.:** (2009-2011) Entomology, University of Mohaghegh Ardabili, Ardabil, Iran.

Dissertation: "Effect of different host plants on nutritional indices and some digestive enzymes activity of the cotton bollworm, *Helicoverpa armigera* (Hübner) (Lepidoptera: Noctuidae)"
Supervisors: Prof. Bahram Naseri & Prof. Ghadir Nouri Ghanbalani

- ✓ **Ph.D** : (2012- 2017) Entomology, Faculty of Agriculture, Tarbiat Modares University, Tehran, Iran.

Thesis: "Rational Design and Synthesis of the Peptides as Enzyme Inhibitor and Study of their Inhibitory and Insecticidal Activities on The Indianmeal Moth, *Plodia interpunctella* (Lepidoptera: Pyralidae)"
Supervisors: Prof. Saied Moharramipour & Prof. Reza Hasan Sajedi

Scientific Research Project:

- ✓ Directed design of inhibitor peptides of Coronavirus Main Protease (M^{pro}) by using several insect inhibitors (2020-2021)

- ✓ Effect of different host plants on nutritional indices and some digestive enzymes activity of the cotton leafworm, *Spodoptera littoralis* (Boisduval) (Lepidoptera: Noctuidae) (2020)

- ✓ Biological parameters of *Helicoverpa armigera* (Hübner) (Lepidoptera: Noctuidae) on different host plants (2011-2012)

Teaching Experience

- Visiting Professor (2013-2018) Department of Plant Production Technology and Department of Production and utilization of medicinal and aromatic plants, Imam Khomeini Higher Education center Jihad-e-Agriculture, Alborz, Mohammad shahr, Iran.
- Visiting Professor (2018) Department of Plant Production, Shahid Chamran University of Ahvaz, Ahvaz, Khuzestan, Iran.

Scientific Experience:

Reviewer of Process Biochemistry
Reviewer of Journal of Crop Protection
Reviewer of Journal of Entomological Society of Iran
Editor of Advances in Agricultural Science Journal
Reviewer of Plant Protection (Scientific Journal of Agriculture)
Reviewer of Journal Archives of Phytopathology and Plant Protection

Technical/Professional Skills

Native language: Persian **Other language:** English, Azari
Technical skills: FPLC, Gel electrophoresis (Agarose and Polyacrylamide), Enzyme assay (Elisa reader and Spectrophotometer), PCR, Docking (Haddock, Zdock, Autodock, Cluspro), Modelling, Molecular Dynamics, Chimera, HyperChem, Gene Runner, Pymol, Spdbviewer, ChemOffice, Biovia Discovery Studio, MEGA-X, OpenBabel.

Publications:

Papers:

- Bonvari, A., **Hemmati, S. A.** and Shishehbor, P. 2023. Biochemical characteristics of sorghum cultivars affect life table parameters, feeding performance and digestive enzymes activities of *Helicoverpa armigera*. *Entomol. Exp. Appl*. In press.
- Barzkar, M., Shishehbor, P., Habibpour, B., **Hemmati, S. A.** and Riahi, E. 2023. Development, survival, and reproduction of *Amblyseius swirskii* (Athias- Henriot) (Acari: Phytoseiidae) feeding on different pollen grains. *Acarologia*, 63, 1062-1071. DOI: 10.24349/izmp-v7mc.
- Atashi, N., Shishehbor, P., Seraj, A. A., Rasekh, A., **Hemmati, S. A.** and Ugine, T. A. 2023. Functional and Numerical Responses of *Trichogramma euproctidis* (Hymenoptera: Trichogrammatidae) to *Helicoverpa armigera* (Lepidoptera: Noctuidae) Under Laboratory Conditions. *Neot. Entomol*. DOI: 10.1007/s13744-023-01073-x.
- Zamani Fard, S., **Hemmati, S. A.** and Shishehbor, P. 2023. Biological and population growth traits of *Spodoptera littoralis* (Lepidoptera: Noctuidae) on various mung bean (*Vigna radiata*) varieties. *Appl. Entomol. Zool*. DOI: 10.1007/s13355-023-00839-4.

- Jaafari-behi, V., Ziaee, M., Kocheili, F., **Hemmati, S. A.** and Francikowski, J. 2023. Life-table parameters of *Plodia interpunctella* (Lepidoptera: Pyralidae) on different stored date palm fruits under laboratory conditions. *J. Insect Sci.* 23, 1–9 DOI: 10.1093/jisesa/iead028.
- Jafari, H., Habibpour, B., **Hemmati, S. A.** and Stelinski, L. L. 2023. Population Growth Parameters of *Helicoverpa armigera* (Hübner) on Various Legume Seeds Reveal Potential Tolerance Traits. *Sustainability*, 15, 7502. DOI: 10.3390/ su15097502.
- Atashi, N., Shishehbor, P., Seraj, A. A., Rasekh, A., **Hemmati, S. A**. and Ugine, T. A. 2023. The effect of temperature on the bionomics of *Trichogramma euproctidis* (Hym.: Trichogrammatidae) parasitizing the tomato fruitworm, *Helicoverpa armigera* (Lep.: Noctuidae). *Plant Prot. (Sci. J. Agri.)*, 46, 73-86. DOI: 10.22055/ppr.2023.42910.1677.
- Hosseini Mousavi, S. M., **Hemmati, S. A.** and Rasekh, A. 2023. Feeding responses and digestive function of *Spodoptera littoralis* (Boisd) on various leafy vegetables exhibit possible tolerance traits. *Bull. Entomol. Res*. 113, 430–438. DOI: 10.1017/ S000748532300010X.
- Mosharaf, N., Tabein, S., Mehrabi-Koushki, M., **Hemmati, S. A.** and Ghorbani, A. 2023. Molecular and in silico analysis of the coat protein of hibiscus chlorotic ringspot virus isolates. *J. Crop Protec*, 12, 1-13. DOR: 20.1001.1.22519041.2023.12.1.1.9.
- Alkanani, L., Rasekh, A., Mossadegh, M. S. and **Hemmati, S. A.** 2023. The feasibility of substituting date syrup for sucrose in honeybee stimulatory feeding in late winter and early spring, in the natural condition of Karbala, Iraq. *Plant Prot. (Sci. J. Agri.)*, 45, 107-119. DOI: 10.22055/ppr.2023.18089.
- Tabein, S. and **Hemmati, S. A.** 2023. Promiscuously replication of betasatellites; in silico study of interaction between betasatellite iteron-like sequence and Rep of helper geminiviruses. *Plant Prot. (Sci. J. Agri.)*, 45, 121-132. DOI: 10.22055/ppr.2023.18034.
- Tabein, S. and **Hemmati, S. A**. 2022. Into the interference between Beet curly top Iran virus and Beet curly top virus: in silico evaluation of the role of the interaction between Rep and the nonanucleotide motif. *J. Crop Protec*. 11, 287-300. DOR: 20.1001.1.22519041.2022.11.2.10.3.
- Jafari, H., **Hemmati, S. A.,** and Habibpour, B. 2022. Evaluation of artificial diets based on different legume seeds on the nutritional physiology and digestive function of *Helicoverpa armigera* (Hübner). *Bull Entomol Res*, 1-11. DOI: 10.1017/S0007485322000402
- Hosseini Mousavi, S. M., **Hemmati, S. A.,** and Rasekh, A. 2022. Effect of different leafy vegetables on the biological and population growth characteristics of the cotton leafworm, *Spodoptera littoralis* (Boisd). *J Entomol Soc Iran*, 41(4). DOI: 10.22117/JESI.2022.359189.1461

- **Hemmati, S. A.,** Shishehbor, P., and Stelinski, L. L. 2022. Life table parameters and digestive enzyme activity of *Spodoptera littoralis* (Boisd) (Lepidoptera: Noctuidae) on selected legume cultivars. Insects, 13, 661. DOI: 10.3390/insects13070661
- Zamani Fard, S., **Hemmati, S. A.,** Shishehbor, P., and Stelinski, L. L. 2022. Growth, consumption and digestive enzyme activities of *Spodoptera littoralis* (Boisd) on various mung bean cultivars reveal potential tolerance traits. *J. Appl. Entomol.* 146, 1–10. DOI: 10.1111/jen.13055
- Babamir-Satehi, A., Habibpour, B., Ranjbar Aghdam, H., and **Hemmati, S. A.** 2022. Interaction between feeding efficiency and digestive physiology of the pink stem borer, *Sesamia cretica* Lederer (Lepidoptera: Noctuidae), and biochemical compounds of different sugarcane cultivars. *Arthropod-Plant Interact.* 16, 1-8. DOI:10.1007/s11829-022-09898-w
- **Hemmati, S. A.,** and Tabein, S. 2022. Insect protease inhibitors; promising inhibitory compounds against SARS-CoV-2 main protease. *Comput. Biol. Med*. 142, 1-13. DOI: 10.1016/j.compbiomed.2022.105228.
- **Hemmati, S. A.** 2022. Identification of novel antagonists of the ecdysone receptor from the desert locust (*Schistocerca gregaria*) by in silico modelling. *Plant Prot. (Sci. J. Agri.)*. DOI: 10.22055/ppr.2021.17221.
- Shishehbor, P. and **Hemmati, S. A.** 2021. Investigation of secondary metabolites in bean cultivars and their impact on the nutritional performance of *Spodoptera littoralis* (Lep.: Noctuidae). *Bull. Entomol. Res.* 112(3), 378-388. DOI:10.1017/S0007485321000948.
- Ebrahimifar, J. Shishehbor, P. Rasekh, A. **Hemmati, S. A.** and Riddick, E. W. 2021. Evaluation of *Artemia franciscana* Cysts to Improve Diets for Mass Rearing *Stethorus gilvifrons*, a Predator of *Tetranychus turkestani*. *Insects*, 12(7), 632.
- Atashi, N., Shishehbor, P., Seraj, A. A., Rasekh, A., **Hemmati, S. A.** and Riddick, E. W. 2021. Effects of *Helicoverpa armigera* Egg Age on Development, Reproduction, and Life Table Parameters of *Trichogramma euproctidis*. *Insects*, 12(7), 569.
- **Hemmati, S. A.,** Karam Kiani, N. and Serrão, J. E. and Jitonnom, J. 2021. Inhibitory potential of a designed peptide inhibitor based on zymogen structure of trypsin from *Spodoptera frugiperda*: in silico insights. *Int. J. Pept. Res. Ther*. DOI: 10.1007/s10989-021-10200-4.
- **Hemmati, S. A.** 2021. Structural, functional, and phylogenetic studies of chymotrypsin enzyme genes in insects: a bioinformatics approach. *Plant Prot.* DOI: 10.22055/PPR.2020.16417.
- **Hemmati, S. A.,** Takaloo, Z., Taghdir, M., Mehrabadi, M., Balalaie, S. Moharramipour, S. and Sajedi, R. H. 2021. The trypsin inhibitor pro-peptide induces toxic effects in Indianmeal moth, *Plodia interpunctella. Pestic. Biochem. Phys.* DOI: 10.1016/j.pestbp.2020.104730.

- **Hemmati, S. A.** and Karam Kiani, N. 2020. Evaluation of the inhibitory potential of pro-peptide region as the inhibitor of the digestive chymotrypsin of cotton bollworm, *Helicoverpa armigera* (Lepidoptera: Noctuidae), based on in silico studies. *JESI.* DOI: 10.22117/jesi.2020.342422.1371.
- Ebrahimifar, J. Shishehbor, P. Rasekh, A. **Hemmati, S. A.** and Riddick, E. W. 2020. Effects of Three Artificial Diets on Life History Parameters of the Ladybird Beetle *Stethorus gilvifrons*, a Predator of Tetranychid Mites. *Insects*, 11(9), 579.
- **Hemmati, S. A.** and Mehrabadi, M. 2020. Structural ensemble-based computational analysis of trypsin enzyme genes discovered highly conserved peptide motifs in insects. *Arch. Phytopathol. Pflanzenschutz*. DOI: 10.1080/03235408.2020.1744978.
- **Hemmati, S. A.,** Sajedi, R. H., Moharramipour, S., Taghdir, M., Rahmani, H., Etezad, S. M. and Mehrabadi, M. 2017. Biochemical characterization and structural analysis of trypsin from *Plodia interpunctella* midgut: implication of determinants in extremely alkaline pH activity profile. *Physiol. Entomol.* 42(4), 307-318. DOI: 10.1111/phen.12196
- Razmjou, J., Naseri, B., **Hemati, S. A.** 2014. Comparative performance of the cotton bollworm, *Helicoverpa armigera* (Hübner) (Lepidoptera: Noctuidae) on various host plants. *J. Pest Sci.* DOI 10.1007/s10340-013-0515-9.
- **Hemati, S. A.,** Naseri, B., Razmjou, J. 2013. Reproductive performance and growth indices of the cotton bollworm, *Helicoverpa armigera* (Hübner) (Lepidoptera: Noctuidae) on various host plants. *J. Crop Protec.* 2 (2): 193-208.
- **Hemati, S. A.,** Naseri, B., Ganbalani, G. N., Dastjerdi, H. R., Golizadeh, A. 2012. Digestive proteolytic and amylolytic activities and feeding responses of *Helicoverpa armigera* (Noctuidae: Lepidoptera) on different host plants. J. Econ. Entomol. 105 (4): 1439-1446.
- **Hemati, S. A.,** Naseri, B., Ganbalani, G. N., Dastjerdi, H. R., Golizadeh, A. 2012. Effect of different host plants on nutritional indices of the pod borer, *Helicoverpa armigera*. *J. Insect Sci.* 12:55 available online: insectscience.org/12.55

International Conference:

- Tabein, S. and **Hemmati, S. A.** 2021. Study on interactions between iteron like sequence of betasatellite with replication associated proteins encoded by helper viruses. 4th International & 12th National Biotechnology Congress of Islamic Republic of Iran.
- **Hemmati, S. A.** 2019. Comparative bioinformatics analysis of acyl-CoA dehydrogenase from *Galleria mellonella* (Lepidoptera: Pyralidae). Third Iranian international congress of entomology. Tabriz, Iran.

- **Hemmati, S. A. and Toosi, M.** 2019. Molecular docking simulation studies suggest a new peptide inhibitor based on zymogen structure of trypsin from *Periplaneta americana*. Third Iranian international congress of entomology. Tabriz, Iran.
- Tabein, S. and **Hemmati, S. A.** 2019. Homology modeling and docking analysis of Rep encoded by beet curly top viruses with their nonanucleotide motifs. 3rd International & 11th National Biotechnology Congress of Islamic Republic of Iran.
- **Hemmati, S. A.,** Sajedi, R. H., Moharramipour, S., Balalaie, S., Taghdir, M., Mehrabadi, M., Rahmani, H. A. 2017. Directed design of peptide inhibitor based on zymogen structure of trypsin to assess of inhibitory and insecticidal effects on Plodia interpunctella. P. 127 in Proceeding of International Iranian Peptide Conference & Humboldt-Kolleg, 9–12 January 2017, Tehran, Iran. (**Award for the best poster prize**).
- **Hemati, S. A.,** Naseri, B., Ganbalani, G. N., Dastjerdi, H. R., Golizadeh, A. 2011. Effect of different host plants on feeding performance of *Helicoverpa armigera* (Hübner) (Lepidoptera: Noctuidae). P. 42 in Proceeding of Global Conference on Entomology, 5–9 March 2011, Chiang Mai, Thailand.