

Tariq Mustafa, Ph.D.

Associate Professor
Department of Entomology, University of Agriculture Faisalabad, Constituent
College, Depalpur, Okara, Pakistan
Alumni: Washington State University, Pullman, USA
Cell & WhatsApp: 0300-5091619
Email: tariqmustafa.bk@gmail.com; tariq.mustafa@uaf.edu.pk
Research Gate: <https://www.researchgate.net/profile/Tariq-Mustafa-2>
Google Scholar: <https://scholar.google.co.uk/citations?user=6S-XMb0AAAAJ&hl=en&oi=ao>



Research Interests

- Insect ecology
- Probing Biology
- Biological control
- IPM

Objectives

- 1- To investigate the relationships between insect vectors and host plants to understand their ecological significance, for plant health, insect behavior, and pest population dynamics.
- 2- To investigate the life cycle, feeding behavior, and vectorial capacity of insect pests, and identification key factors for the suppression of phytopathogens.
- 3- To evaluate the effectiveness of combining biological, cultural, and chemical control methods for pest control, to minimize pest damage while preserving beneficial insect populations.
- 4- To explore the potential of natural enemies, such as parasitoids and predators, in controlling pest populations.
- 5- To utilize molecular techniques to study the role of insect endosymbionts in host physiology, reproduction, survival and pathogen transmission.
- 6- To utilize advanced genetic and molecular techniques to pinpoint weaknesses in pest species.

Education:

Degree	Year	Institute	Major
Ph.D.	2014	Washington State University, Pullman, USA	Entomology
M. Sc. (Hons)	2005	University of Agriculture Faisalabad (UAF)	Entomology
B. Sc. (Hons)	2003	PMAS Arid Agriculture Rawalpindi (UAAR)	Entomology

Dissertations:

Ph.D. (Entomology): Comparative biology of potato psyllid, *Bactericera cockerelli* (Hemiptera: Triozidae) haplotypes
M.Sc. (Hons) Agriculture Entomology: Studies on population dynamics, damage, cultural and chemical control of subterranean termites at Bhakkar

Professional Experience:

09.2023-Present	Associate Professor: UAF Constituent College Depalpur, Okara, Pakistan
07-2024-08.2024	Acting Principal: UAF Constituent College Depalpur, Okara, Pakistan
11.2023-01.2025	Assoc. Director Student Affairs: UAF Constituent College Depalpur, Okara.
08.2016-09.2023	Lecturer: UAF Constituent College Depalpur, Okara, Pakistan
01.2015-06.2016	Post-doc researcher; Washington State University, and USDA-ARS
01.2011-12.2014	Graduate research assistant; Washington State University, and USDA-ARS
02.2009-08.2010	Agriculture officer: Pest Warning and Quality Control of Pesticides, Lahore
04.2006-07.2008	Agriculture officer; Fruit and Vegetable Development Project, Department of Agriculture, Sargodha, Pakistan
10.2006-02.2007	Visiting lecturer (Entomology); University of Sargodha, Pakistan
05.2005-03.2006	Technical services officer; Syngenta Pvt. (Ltd), Lahore, Pakistan

Research Projects:

02.2022-11.2025	“Ecological adaptability of <i>Zygogramma</i> and its mass releases for managing Parthenium” Higher Education Commission, Pakistan (20-15655/NRPU/R&D/HEC/2021)
01.2019-09.2021	“Strengthening Vegetable Value Chains in Pakistan (SVVCP) for Greater Community Livelihood Benefits” ACIAR & CABI Pakistan (937-60/ ORIC)

Academic Courses Taught

Sr. No	Course Code	Course Title	Credit Hrs.	Program
1	ENT-301	Introductory Entomology	2(1-1)	Undergraduate
2	ENT-402	Applied Entomology	2(1-1)	Undergraduate
3	ENT-502	Insect Physiology	3(2-1)	Undergraduate
4	ENT-505	Insect Ecology and Behavior	3(2-1)	Undergraduate
5	ENT-506	Agricultural Pests & Their Management	3(2-1)	Undergraduate
6	ENT-516	Introduction to Insect Molecular Genetics	2(1-1)	Undergraduate
7	ENT-605	Insecticides & Their Application	4(3-1)	Undergraduate
8	ENT-609	Pest Forecasting and Management	4(3-1)	Undergraduate
9	ENT-611	Preparation of Research Project & Scientific Writing	2(1-1)	Undergraduate
10	ENT-701	Research Methods in Entomology	3(2-1)	Postgraduate
11	ENT-710	Insects in relation to plant diseases	3(2-1)	Postgraduate
12	ENT-717	Biological control of Insects Pests	3(2-1)	Postgraduate
13	ENT-718	Advances in Pest Management Research	3(2-1)	Postgraduate

Supervised Students:

M.Sc (Hons): 16
M.Phill: 6

Publications:

- 1- Cooper, W., K. S. Grimm, G. Angelella, and **T. Mustafa**, 2023. Acquisition and transmission of “*Candidatus Liberibacter solanacearum*” differs among *Wolbachia*-infected and -uninfected haplotypes of *Bactericera cockerelli*. Plant Disease, 107(8): 2440-2445.
- 2- Nadeem, M., Iqbal, J., **Mustafa**, T., Rehman, G., Shahzad, M.F., Younas, M., Khan, A.A., Hamza, A., Ghaffar, A. and Abbas, M., 2023. Entomopathogenic fungi: As an eco-friendly approach for the management of thrips *Megalurothrips distalis* Karny (Thysanoptera: Thripidae) and their impact on the yield in Mungbean (*Vigna radiata* (L.) Wilczek). Sarhad Journal of Agriculture, 39(3), 757-764.
- 3- Qasim, M., Akutse, K.S., Hussain, D., Al-Zoubi, O.M., **Mustafa**, T., Aguila, L.C.R., Alamri, S., Hashem, M. and Wang, L., 2022. Powdery mildew fungus *Oidium lycopersici* infected-tomato plants attracts the non-vector greenhouse whitefly, *Trialeurodes vaporariorum*, but seems impair their development. Agronomy, 12(11), 2791.
- 4- **Mustafa**, T., Butt, T.M., Shoakat, A., Nawaz, A., Yousaf, H.K., Zack, R.S., Hanif, S., Rashid, H., Bilal, A.R. and Mustafa, N.B., 2021. First record of fall armyworm *Spodoptera frugiperda* (JE Smith)(Lepidoptera: Noctuidae) damage to potato: a potential pest of the crop in Pakistan. International Journal of Agricultural Extension, 9(3), 501-505.
- 5- **Mustafa**, T., Horton, D.R., Cooper, W.R., Zack, R.S., Thinakaran, J., Karasev, A. and Munyaneza, J., 2021. Stylet-probing behavior of two *Bactericera* species on host and non-host plants (Hemiptera: Psyllodea: Trioziidae). Environmental Entomology, 50: 919-928.

- 6- Rasul, A., Akhtar, Z.R., Rehman, M.A., **Mustafa, T.**, Ali, A., Sagheer, M. and Mukhtar, M.L., 2021. Field evolved resistance and inheritance patterns of laboratory selected strains of oriental armyworm, *Mythimna separata*, against lambda-cyhalothrin and its cross resistance to other insecticides. Pakistan Journal of Agricultural Sciences, 58(1): 103-109.
- 7- Swisher Grimm, K.D., **Mustafa, T.**, Cooper, W.R. and Munyaneza, J.E., 2020. Growth and yield performance of *Solanum tuberosum* grown from seed potatoes infected with 'Candidatus Liberibacter solanacearum' haplotypes A and B. Plant Disease, 104(3): 688-693.
- 8- Nawaz, A., Ali, H., Sufyan, M., Gogi, M.D., Arif, M.J., Ranjha, M.H., Arshid, M., Waseem, M., **Mustafa, T.**, Qasim, M. and Rizwan, M., 2019. Comparative bio-efficacy of nuclear polyhedrosis virus (NPV) and Spinosad against American bollworm, *Helicoverpa armigera* (Hubner). Revista Brasileira de Entomologia, 63(4): 277-282.
- 9- Swisher Grimm, K.D., **Mustafa, T.**, Rodney Cooper, W. and Munyaneza, J.E., 2018. Role of 'Candidatus Liberibacter solanacearum' and *Bactericera cockerelli* haplotypes in zebra chip incidence and symptom severity. American Journal of Potato Research, 95: 709-719.
- 10- Liang, P.S., Haff, R.P., Hua, S.S.T., Munyaneza, J.E., **Mustafa, T.** and Sarreal, S.B.L., 2018. Nondestructive detection of zebra chip disease in potatoes using near-infrared spectroscopy. biosystems engineering, 166: 161-169.
- 11- Horton, D.R., Miliczky, E., Lewis, T.M., Cooper, W.R., Munyaneza, J.E., **Mustafa, T.**, Thinakaran, J., Waters, T.D., Wohleb, C.H. and Jensen, A.S., 2017. New geographic records for the Nearctic psyllid *Bactericera maculipennis* (Crawford) with biological notes and descriptions of the egg and fifth-instar nymph (Hemiptera: Psylloidea: Triozidae). Proceedings of the Entomological Society of Washington, 119(2): 191-214.
- 12- Thinakaran, J., Horton, D.R., Rodney Cooper, W., Jensen, A.S., Wohleb, C.H., Dahan, J., **Mustafa, T.**, Karasev, A.V. and Munyaneza, J.E., 2017. Association of potato psyllid (*Bactericera cockerelli*; Hemiptera: Triozidae) with *Lycium* spp. (Solanaceae) in potato growing regions of Washington, Idaho, and Oregon. American Journal of Potato Research, 94: 490-499.
- 13- Munyaneza, J.E., **Mustafa, T.**, Fisher, T.W., Sengoda, V.G. and Horton, D.R., 2016. Assessing the likelihood of transmission of *Candidatus Liberibacter solanacearum* to carrot by potato psyllid, *Bactericera cockerelli* (Hemiptera: Triozidae). PLoS One, 11(8): e0161016.
- 14- **Mustafa, T.**, Horton, D.R., Cooper, W.R., Swisher, K.D., Zack, R.S. and Munyaneza, J.E., 2015. Interhaplotype fertility and effects of host plant on reproductive traits of three haplotypes of *Bactericera cockerelli* (Hemiptera: Triozidae). Environmental Entomology, 44(2): 300-308.
- 15- **Mustafa, T.**, Horton, D.R., Swisher, K.D., Zack, R.S. and Munyaneza, J.E., 2015. Effects of host plant on development and body size of three haplotypes of *Bactericera cockerelli* (Hemiptera: Triozidae). Environmental entomology, 44(3): 593-600.
- 16- Cooper, W.R., Swisher, K.D., Garczynski, S.F., **Mustafa, T.**, Munyaneza, J.E. and Horton, D.R., 2015. Wolbachia infection differs among divergent mitochondrial haplotypes of *Bactericera cockerelli* (Hemiptera: Triozidae). Annals of the Entomological Society of America, 108(2): 137-145.
- 17- **Mustafa, T.**, Alvarez, J.M. and Munyaneza, J.E., 2015. Effect of cyantraniliprole on probing behavior of the potato psyllid (Hemiptera: Triozidae) as measured by the electrical penetration graph technique. Journal of Economic Entomology, 108(6): 2529-2535.
- 18- **Mustafa, T.**, Horton, D.R., Cooper, W.R., Swisher, K.D., Zack, R.S., Pappu, H.R. and Munyaneza, J.E., 2015. Use of electrical penetration graph technology to examine transmission of 'Candidatus Liberibacter solanacearum' to potato by three haplotypes of potato psyllid (*Bactericera cockerelli*; Hemiptera: Triozidae). PLoS One, 10(9): e0138946.
- 19- Ahmed, S., Mustafa, T., Riaz, M.A. and Hussain, A., 2006. Efficacy of insecticides against subterranean termites in sugarcane. International Journal of Agriculture and Biology, 8(4): 508-510.
- 20- **Mustafa, T.**, H. Javed and I. Akhtar, 2003. Impact of environmental factors and physico-morphic characters of sunflower (*Helianthus annus*) genotypes on insect pest complex. Asian Journal of Plant sciences, 2(17): 1166-1169.

a) *Proceedings Paper:*

Sr No	Title of Proceedings Paper	International Proceedings	Date & Place
1	Potato psyllids and their allies: two fronts in the war against zebra chip disease. Cooper, W.R., K. Swisher, S.Garczynski, T. Mustafa, J. E. Munyaneza, and D. R. Horton.	Proceedings of Washington-Oregon potato conference	January 27-29, 2015. Kennewick, WA, USA
2	Liberibacter transmission efficiency among potato psyllid haplotypes. Mustafa, T., J. E. Munyaneza, K. D. Swisher, D. R. Horton, and R. S. Zack.	Proceedings of the 14th Annual SCRI Zebra Chip Reporting Session	November, 9-12, 2014. Portland, OR, USA.
3	Assessing reproduction of potato psyllid haplotypes. Mustafa, T., J. E. Munyaneza, D. R. Horton, W. R. Cooper, K. D. Swisher, and R. S. Zack.	Proceedings of the 14th Annual SCRI Zebra Chip Reporting Session	November, 9-12, 2014. Portland, OR, USA.
4	Comparative life history characteristics of the potato psyllid haplotypes. Mustafa, T., J. E. Munyaneza, D. R. Horton, and R. S. Zack. 2013.	Proceedings of the 13th Annual SCRI Zebra Chip Reporting Session	November, 3-6, 2013. San Antonio, TX, USA.

b) *Abstracts/ Posters/Talk in International/ National Conferences:*

Sr No	Title of Abstracts/ Posters/Talk	Conference	Date & Place
1	Comparative developmental biology of fall armyworm, <i>Spodoptera frugiperda</i> (Lepidoptera: Noctuidae), on different artificial diets and natural plants. Shaokat, A., T. Mustafa, S.J.N. Ahmad, and J.N. Ahmad	International Conference on "Precision and Sustainable Agriculture under climate change.	Dated 16-17 th February 2023. KFUEIT Rahim Yar Khan
2	Comparative probing activity of two psyllid species on host and non-host plants (Hemiptera: Psylloidea: Triozidae: <i>Bactericera</i>). Mustafa, T., D. R. Horton, W. R. Cooper, R. S. Zack and J. Munyaneza.	Entomological Society of America	2019 Nov. 17-20, St. Louis, MO, USA
3	Relative impact of different companion plantings on population dynamics of wheat aphid, <i>Sitobion avenae</i> under field condition. Seyab, M., and T. Mustafa.	Entomological Society of America	2019 Nov. 17-20, St. Louis, MO, USA
4	Impact of crop phenology on the population of whitefly (<i>Bemisia tabaci</i> Gennadius) and cotton yield in Multan, Pakistan. Iqbal, M., M. J. Arif, M. U. Hassan, S. Saeed, N. A. Saeed, T. Mustafa, and F. Amjad.	Entomological Society of America,	2019 Nov. 17-20, St. Louis, MO, USA
5	Understanding probing biology and transmission of ‘<i>Candidatus Liberibacter solanacearum</i>’ by potato psyllid using electropenetrography. Mustafa, T., D. R. Horton, W. R. Cooper, R. S. Zack, and J. E. Munyaneza.	Entomological Society of America. Symposium: Psyllids and “ <i>Candidatus Liberibacter</i> ” Species: Novel Insights about these destructive vector- borne partnership	2017 Nov. 5-8, Denver, CO, USA
6	Assessing the effects of temperature on the stylet probing behavior of the potato psyllid, <i>Bactericera cockerelli</i>, and transmission of ‘<i>Candidatus Liberibacter solanacearum</i>’, using EPG technology. T. Mustafa, C. Carlos and J. E. Munyaneza.	International Entomological Congress (One exclusive day on current scenario and management of Pink bollworm)	2016 Dec. 16- 18 Department of Entomology, University of Agriculture, Faisalabad
7	Spatial and temporal distribution of potato psyllid haplotypes on matrimony vine in south central Washington.	Pacific branch of the Entomological Society Of America	2016 100th annual meeting of the Pacific branch of the entomological society of

	Thinakaran, J., J. E. Munyaneza, W. R. Cooper, D. R. Horton, A. Karasev, J. Dahan, T. Mustafa , and C. Wohleb.		America, April 3-6, Honolulu, Hawaii.
8	Assessing '<i>Candidatus Liberibacter solanacearum</i>' transmission efficiency of adults and nymphs of potato psyllid (<i>Bactericera cockerelli</i>) using EPG technology. Mustafa, T. , J. E. Munyaneza, D. R. Horton, W. R. Cooper, R. S. Zack, and H. R. Pappu.	Pacific branch of the Entomological Society Of America	2016 100th annual meeting of the Pacific branch of the entomological society of America, April 3-6, Honolulu, Hawaii.
9	Use of EPG to examine effect of cyantraniliprole on probing behavior of potato psyllid, <i>Bactericera cockerelli</i>. Mustafa. T. , J. E. Munyaneza, and J. M. Alvarez.	Entomological Society of America	2015 63 rd annual meeting of Entomological Society of America, November, 15-18, Minneapolis, MN.
10	'<i>Candidatus Liberibacter solanacearum</i>' transmission efficiency among three potato psyllid haplotypes. Mustafa, T. , J. E. Munyaneza, K. Swisher, W. R. Cooper, D. Horton, R. Zack and H. Pappu.	Entomological Society of America	2015 99th Annual Meeting of Pacific Branch, Entomological Society of America, April 12- 15th Coeur d'Alene Resort Coeur d'Alene, ID
11	The effect of an anthranilic diamide in the management of the tomato-potato psyllid and zebra chip. Alvarez, J. M., J. Munyaneza, T. Mustafa , S. Rondon, and H. E. Portillo.	Entomological Society of America	2015 99th Annual Meeting of Pacific Branch, Entomological Society of America, April 12- 15th Coeur d'Alene Resort Coeur d'Alene, ID
12	Differences in bacterial endosymbionts among potato psyllid haplotypes. Cooper, W. R., K. Swisher, S. F. Garczynski, T. Mustafa , J. Munyaneza and D. Horton.	Entomological Society of America	2015 99th Annual Meeting of Pacific Branch, Entomological Society of America, April 12- 15th Coeur d'Alene Resort Coeur d'Alene, ID
13	Assessing fertility between haplotypes of the psyllid <i>Bactericera cockerelli</i>. Mustafa, T. , D. R. Horton, W. R. Cooper, R. S. Zack, and J. E. Munyaneza.	Entomological Society of America	2014 62nd annual meeting of Entomological Society of America, November, 16-19, Portland, OR.
14	Liberibacter transmission efficiency among potato psyllid haplotypes. Mustafa, T. , V.G. Sengoda, K.D. Swisher, J.E. Munyaneza, D. Horton, and R.S. Zack.	Potato Association of America	2014 98th annual meeting of Potato Association of America, July, 27-31, Spokane, WA.
15	<i>Wolbachia</i>-infection differs among potato psyllid haplotypes. Cooper, W. R., T. Mustafa , K. D. Swisher, S. F. Garczynski, J. E. Munyaneza, and D. R. Horton.	Potato Association of America	2014 98th annual meeting of potato association of America, July, 27-31, Spokane, WA.
16	The effect of Cyazypyr™ on psyllid pests that vector the huanglongbing and zebra chip diseases in citrus and potatoes, respectively. Alvarez, J. M., R. Cameron, H. E. Portillo, I. B. Annan, S. I. Rondon, E. Echegaray, J. E. Munyaneza, T. Mustafa , D. Hall, and E. Ammar.	Pacific branch of the Entomological Society of America	2014 98th annual meeting of the Pacific branch of the Entomological Society of America, April 6-9, Tucson, Arizona.

Membership of Professional Societies & Reviewer:

- Entomological Society of America
2. The Potato Association of America

Reviewer

- Journal of Economic Entomology
- Plos One
- Florida Entomologist
- NJAS: Impact in Agricultural and Life Sciences
- International Journal of Tropical Insect Science
- HortScience
- Zoo Botanica

References

Dr. Richard S. Zack

Department of Entomology
Washington State University, USA
Pullman, WA 99164-6382, USA
Phone. 509-335-3394
zack@wsu.edu

Dr. Joseph E Munyaneza

National Program Leader
Vegetable, Sugar beet & Greenhouse Crops
Crop Production and Protection
USDA-Agricultural Research Service
5601 Sunnyside Avenue, GWCC Rm 4-2238
Beltsville, MD 20705, USA
Phone: 301-504-4562
Joseph.Munyaneza@ars.usda.gov

Dr. Tahir Munir Butt

Associate Professor
University of Agriculture Faisalabad,
Constituent College Depalpur, Okara.
Phone. 0092-300-9468909
tahirmunir@uaf.edu.pk

Dr. William Rodney Cooper

Research Leader
USDA-ARS, Yakima Agricultural Research
Laboratory, 5230 Konnowac Pass Road
Wapato, WA 98951, USA
Phone: 509-439-5170
rodney.cooper@usda.gov

Dr. David R. Horton

Research Entomologist
USDA-ARS, Yakima Agricultural Research
Laboratory, 5230 Konnowac Pass Road
Wapato, WA 98951, USA
Phone: 509-454-6564
David.horton@ars.usda.gov