

CURRICULUM VITAE

NARATIVE

Dr. El Bouhssini and his team have pioneered the development of integrated pest management (IPM) options for insect pests of cereal and legume crops in Central and West Asia and North Africa (CWANA). Over the past twenty years, he has built up a world-class entomology research program at the International Center for Agricultural Research in the Dry Areas (ICARDA), and a large, well organized research network linking countries in the CWANA region with advanced research centers in the West. Innovation and partnerships are the hallmarks of Mustapha’s research. Innovation is reflected in the quality of his science outputs. Cooperation is clearly seen in his strong partnerships with ICARDA scientists from different disciplines, with national program scientists in every country where ICARDA works, and with advanced research institutions. Some of the major accomplishments that Dr. El Bouhssini has been associated with are summarized below:

1. His team was the first to demonstrate the effectiveness of the Focused Identification of Germplasm Strategy (FIGS) approach in identifying sources of insect pest resistance from large germplasm collections. FIGS uses GIS-enabled analysis of agro-climatic data from germplasm collection sites to make predictions about in-situ selection pressures. This approach greatly reduces the time and resources required to identify sources of resistance.
2. Identification of sources of resistance in the ICARDA gene bank to a wide range of insect pests, including for the first time to Sitona weevil (*Sitona crinitus* Herbst) in wild lentil (Lens) species, and to Sunn pest (*Eurygaster* *integriceps* Puton) in wheat and its wild relatives at vegetative stages. Sources of resistance in wheat and its wild relatives to Hessian fly and in barley to Russian wheat aphid have been shared with cooperators worldwide.
3. Development of the first ever wheat varieties with resistance to Hessian fly, *Mayetiola destructor* (Say), in CWANA: three resistant bread wheat and six durum wheat varieties were released in Morocco. These varieties (or their derivatives) are expected to have major impact throughout the Hessian fly-infested areas in North Africa.

1. Development of a range of germplasm with resistance to the Russian wheat aphid*,* *Diuraphis noxia* (Kurdjumov): 71 F6 barley lines for North Africa, 200 F5 barley lines for Ethiopia, and 50 F8 bread wheat lines for the highland areas of CWANA - the first aphid-resistant barley and wheat developed in CWANA.
2. Development of a range of germplasm with resistance to chickpea leaf miner (*Liriomyza cicerina* Rondani): 42 F8 resistant lines of which seven (with good agronomic characteristics, seed quality, high yield) were registered in the Journal of Plant Registrations (2007). These were the first chickpea breeding lines with leaf miner resistance. This resistant germplasm has been shared with countries in CWANA and Latin America.
3. Elucidation of the mechanism of resistance in chickpea to leaf miner: His research group demonstrated that the oxalic acid concentration in leaves was found correlated with resistance to chickpea leaf miner.

1. Elucidation of the genetics of resistance in wheat, and avirulence in Hessian fly (complete or incomplete dominance in relation to larval survival on resistant wheat plants). The studies showed how deployment of resistance genes with incomplete dominance could prolong the life span of resistant varieties by reducing selection pressure for virulence in Hessian fly populations. The approach has major implications in gene deployment strategies worldwide.
2. Sequencing the genomes of Hessian fly and Russian wheat (team member).
3. Isolation and characterization of a prolyl endoprotease from Sunn pest-infected wheat grains. The enzyme was found to be a unique serine protease of the S9A family by way of its substrate recognition of proteins greater than 30 KD in size. These findings have laid foundation for design of inhibitors for this devastating enzyme of Sunn pest.
4. Development of IPM options to control chickpea leaf miner using a combination of genetic resistance, planting date, and botanical insecticides.
5. Development of IPM package to control Sunn pest in wheat in West Asia with multiple components: changing spraying policy from indiscriminate aerial spraying to localized ground sprays based on economic thresholds, devolution of control to farmers, enhancement/conservation of egg parasitoids, and the use of entomopathogenic fungi. Parts of this package are being used by farmers on over 3 million hectares in several countries in West and Central Asia.
6. Development of human resources in CWANA (Advised 20 M.S. and 16 Ph.D. students, and trained over 500 junior scientists and technicians in the area of IPM).
7. Establishment of Farmers Field Schools (FFS) in several countries of CWANA to promote adoption of IPM options by farmers.

*In summary, Dr El Bouhssini has had outstanding achievements in the entomology at the international level and has had exemplary impact at the farmers’ level in improving livelihoods and rural welfare. While his work was mainly related to the CWANA region, the influence of his science is global.*

PERSONAL DATA

**Name:** Mustapha El Bouhssini

**Citizenship:** Moroccan/Canadian

**CONTACT ADDRESS:**

International Center for Agricultural Research in the Dry Areas (ICARDA)

ICARDA Rabat Office  
P.O. Box: 6299 Rabat-Instituts/Rabat, Morocco  
Tel: (212)5 37 68 29 09  
Fax: (212)5 37 67 54 96  
E-mail: [M.Bohssini@cgiar.org](mailto:M.Bohssini@cgiar.org)

**EDUCATION**

* Ph.D., Entomology, 1992, Kansas State University, Manhattan, USA
* M.S., Entomology, 1986, Kansas State University, Manhattan, USA
* B.S., Techniques in Agronomy, 1980, National School of Agriculture, Meknes, Morocco

**AWARDS**

* Lifetime Achievement Award in plant resistance to insects from the International Association of Plant Resistance to Insects (IPRI), 2018.
* *Distinguished Scientist Award* from the International Branch of the Entomological Society of America, 2014.
* *Distinguished Alumnus Award* from the Entomology Department, Kansas State University, 2014.
* *Award of Merit* for Research on Hessian fly Resistance in Wheat in Morocco from the International Plant Resistance to Insects Working Group, 2014 (team member).
* ICARDA/Iraq O*utstanding Research Team* (IPM of date palm insect pests in Iraq), 2011 (team member).
* ICARDA O*utstanding Research Team* (Resistance to insects identified through the Focused Identification of Germplasm Strategy), 2010 (team member).
* *Hassan II Grand Prize* for Invention and Research for the development of high-yielding durum wheat varieties with excellent grain quality and resistance to Hessian fly, and diseases, adapted to dryland conditions, 2009 (team member).
  + International Plant Protection *Award of Distinction* from the International Association for the Plant Protection Sciences (IAPPS), 2007.
* CSO (Civil Society Organizations)/*CGIAR* (Consultative Group on International Agricultural Research) *Award for Innovative Partnership* between ICARDA and the University of Vermont on IPM of Sunn Pest, 2006 (team leader).
* ICARDA O*utstanding Research Team* (IPM of Sunn Pest Research Group), 2005 (team leader).
* ICARDA O*utstanding Scientific Article*, 2005: M. Aquino de Muro, S. Elliott, D. Moore, B. L. Parker, M. Skinner, W. Reid, and M. El Bouhssini. 2005. Molecular characterization of *Beauveria bassiana* isolates obtained from overwintering sites of Sunn pests (*Eurygaster* and *Aelia* species). Mycological Research 109(3): 294–306.
* *Research and Development Prize*, 2002, ‘Scientific studies and new technologies’, from the Ministries of Higher Education, Industries and Agriculture, Morocco, for development of the first Hessian fly-resistant durum wheat varieties in Morocco (team member).
* ICARDA *Scientist of the Year*, 1998.
* R.C. Smith Award for *Outstanding Ph.D*. *Student* at Kansas State University, USA, 1991.

**LANGUAGES**

Fluent in Arabic, English, and French

**CONTINUING EDUCATION**

* *Visiting Scientist* at the University of Vermont: worked on the use of entomopathogenic fungi against insect pests, October 2003 to February 2004.
* Workshop on *project cycle management/logical framework*, organized by the University of Wolverhampton, U.K., at ICARDA, 21–25 November 1999.
* Workshop on *scientific writing* organized by the Department of Journalism, University of Nebraska, USA, and held in Settat, Morocco, 1993.
* Workshop on *research management*, organized by OICD (Office of International Cooperation and Development)-USDA, Alexandria, VA, USA, 1993.
* Workshops on *project research management* (method log frame and team), organized by Team Technologies Inc., and held in Settat, Morocco, 1992.

**POSITIONS HELD**

* *Adjunct Professor*, Entomology Department, Kansas State University, Manhattan, KS, USA, December 2005 to date.
* *Principal entomologist* (IPM of cereal and legume insect pests), ICARDA, Rabat, Morocco, 2014 to date.
* *Senior Entomologist* (IPM of cereal and legume insect pests), ICARDA, Aleppo, Syria, September 1997 to 2014.
* *Consultant Entomologist* (IPM of cereal and food legume insect pests), ICARDA, Aleppo, Syria, May 1996 to August 1997.
* *Research Entomologist* (IPM of cereal insect pests), Dryland Research Center (INRA), Settat, Morocco, April 1992 to April 1996.
* *Research Entomologist* (IPM of cereal insect pests), Dryland Research Center (INRA), Settat, Morocco, September 1985 to August 1988.

**TEACHING EXPERIENCE**

* Advised 20 M.S. and 16 Ph.D. students, and trained over 500 junior scientists and technicians from North Africa and West and Central Asia. The various courses (and related details) that I conducted are categorized as follows:
* **Integrated Pest Management**:
  + - * Date palm pests, Manama, **Bahrain**, 4-26 March 2009; **Dubai, UAE**, 30 November-4 December 2014; **Al-Ain, UAE**, 20-23 December 2015.
      * Cereal and legume pests, **Algeria**, 20 -30 April, 2013.
      * Sunn pest, Erbil, **Kurdistan-Iraq**, 31 March-1 April, 2013.
      * Sunn pest, Erbil, **Kurdistan-Iraq**, 25-26 March, 2012.
      * Cereal and legume pests, Settat, **Morocco,** 11-15 May 2009 and 23-26 May, 2011.
      * Sunn pest, Isfara, **Tajikistan**, 23-25 May 2007.
      * Sunn pest, Al Maty, **Kazakhstan**, 14–17 March 2006.
      * Cereal pests, Tashkent, **Uzbekistan**, 18–23 May 2004.
      * Sunn pest, University of Kabul, **Afghanistan**, 24–29 August 2003 and 6–8 March 2004.
      * Cereal and legume pests, ICARDA headquarters (Tel Hadya), **Syria**, every other year from 1996 to 2011.
      * Cereal insects for engineers and technicians from the West Asia and North Africa region, ICARDA, Aleppo**, Syria**, 1994.
      * Cereal insects, for engineers and technicians from the Maghreb countries, **Algeria**, 1992.
      * Cereal insects, for engineers from Syria (Southern Regional Agricultural Development Project), Settat, **Morocco**,1995
* **Host Plant Resistance to Insects**:
  + - * Graduate course at the Institut Agronomique et Vétérinaire (IAV Hassan II), Rabat, **Morocco**, 1992–1996.
      * Genetic resistance of wheat to Hessian fly and other insects. Med. Campus: "Valorisation agronomique et industrielle des céréales Méditerranéennes", **Tunis**, 1995.
* **Pests surveillance**:
  + - * Methods of pests’ surveillance, **Fes-Morocco**, 4-6 June, 2012.
      * Surveillance Methods of Date Palm Pests, **Dubai**, 28-31 January, 2013.

##### MEMBERSHIPS AND ACTIVITIES IN PROFESSIONAL ORGANIZATIONS

* Moroccan Association of Plant Protection; Arab Society for Plant Protection; Entomological Society of America; International Association for the Plant Protection Sciences.
* Member, Organizing Committee of the Conference ‘Acquis et Perspectives de la Recherche Agronomique dans les Zones Arides et Semi-arides du Maroc’, Rabat, **Morocco** (May 1994).
* Chair, International Organizing Committee of the Second International Conference on Sunn Pest, ICARDA, Aleppo, **Syria** (July 2004).
* Co-organizer (T. Shanower and M. El Bouhssini), Symposium on “Advances in Managing Wheat Insect Pests: A Global Perspective”, XXII International Congress of Entomology, Brisbane, **Australia** (August 2004).
* Member of the Entomological Society of America Committee on Education & Outreach (January 2011 to November 2015).
* Member of the Governing Board of the International Association for the Plant Protection Sciences (IAPPS) (October 2011 to date).
* Member of the 2014 Presidential Committee on ESA Grand Challenge Agenda
* Member of the International Steering Committee of the IPRI (International Plant Resistance to Insects) working Group (April 2012 to date)
* Co-chair of the Local Organizing and Scientific Committee of the 21st Biennial International Plant Resistance to Insects Workshop, Marrakech, Morocco April 14-18, 2014.
* Member of the local organizing and scientific committee of the International Conference on Pulses, Marrakech, Morocco, April 18-20, 2016.
* Member of the funding Committee, International Congress of Entomology (ICE), Orlando, Florida, September 25-30, 2016.

**Journal Reviews**

Journal of Applied Entomology, Crop Protection, Annals of Applied Biology, Journal of Insect Science, Bulletin of Entomological Research, Journal of Economic Entomology, Environmental Entomology, Plant Protection Sciences, Arab Journal of Plant Protection, Moroccan Journal of Plant Protection.

**MAJOR RESEARCH INTERESTS**

Integrated pest management, including:

* Biological control (parasitoids/predators and entomopathogenic fungi)
* Host-plant resistance (screening of germplasm, mechanisms of resistance, molecular markers and biotypes characterization through differential and molecular techniques)

##### PUBLICATIONS

Refereed Journal Articles

Livinus Emebiri, **Mustapha El Bousshini**, Mui-Keng Tan, and Francis C. Ogbonnaya. Field-based screening identiﬁes resistance to Sunn pest (Eurygaster integriceps) feeding at vegetative stage in elite wheat genotypes. 2017. Crop & Pasture Science, 126–133 http://dx.doi.org/10.1071/CP16355.

Alexey Morgounov, Aygul Abugalieva, Kadir Akan, Beyhan Akın, Stephen Baenziger, Madhav Bhatta, Abdelfattah A. Dababat, Lütfü Demir, Yerlan Dutbayev, **Mustapha El Bouhssini**, Gül Erginbaş-Orakci, Masahiro Kishii, Mesut Keser, Emrah Koç, Altynbek Kurespek, Abdul Mujeeb-Kazi, Aysel Yorgancılar, Fatih Özdemir, Ibrahim Özturk, Thomas Payne, Gular Qadimaliyeva, Vladimir Shamanin, Kemal Subasi, Gulnura Suleymanova, Enes Yakişir and Yuriy Zelenskiy. 2017. High-yielding winter synthetic hexaploid wheats resistant to multiple diseases and pests. Plant Genetic Resources; 1–6 ISSN 1479-2621 doi:10.1017/S147926211700017X.

Somanagouda B. Patil & Aakash Goyal & Satish S. Chitgupekar & Shiv Kumar & **Mustapha El-Bouhssini.** 2017. Sustainable management of chickpea pod borer. A review. Agron. Sustain. Dev. 37:20 DOI 10.1007/s13593-017-0428-8.

L. C. Emebiri, M.-K. Tan, **M. El Bouhssini**, O. Wildman, A. Jighly, W. Tadesse & F. C. Ogbonnaya. 2016. QTL mapping identifies a major locus for resistance in wheat to Sunn pest (Eurygaster integriceps) feeding at the vegetative growth stage. Theor Appl Genet DOI 10.1007/s00122-016-2812-1.

Ming-Shun Chen, Sanzhen Liu, Haiyan Wang, Xiaoyan Cheng, **Mustapha El Bouhssini** and R. Jeff Whitworth. 2016. Genes Expressed Differentially in Hessian fly Larvae Feeding in Resistant and Susceptible Plants. *Int. J. Mol. Sci.* *17*(8), 1324; doi: 10.3390/ijms17081324.

Chen M-S, Liu S, Wang H, Cheng X, **El Bouhssini M**, Whitworth RJ. 2016. Massive Shift in Gene Expression during Transitions between Developmental Stages of the Gall Midge, Mayetiola Destructor. PLoS ONE 11(5): e0155616. doi:10.1371/journal.pone.0155616.

Douglas A. Landis, Nurali Saidov, Anvar Jaliov, **Mustapha El Bouhssini,** Megan Kennelly, Christie Bahlai, Joy N. Landis, Karim Maredia. 2016. Demonstration of an Integrated Pest Management Program for Wheat in Tajikistan*.* Journal of Integrated Pest Management 2016 7 (1): 11doi: 10.1093/jipm/pmw010.

Khatib, F., A. Karkoukly, A.N. Trisi and **M. El-Bouhssini**. 2016. Genetic diversity of some isolates of entomopathogenic fungi collected from different regions. Arab Journal of Plant Protection, 34(1): 52-61

Ali, L., **M. El-Bouhssini** and M.N. Al-Salty. 2016. Using Sequence Tagged Site (STS) marker and Cleaved Amplified Polymorphic Sequence (CAPS) to study the genetic variation of Sunn pest populations collected from six countries (Iraq, Iran, Uzbekistan, Kazakhstan, Turkey and Syria). Arab Journal of Plant Protection, 34(1): 62-70.

El Fakhouri K., Lhaloui S., Faouzi B., Rochd M. & **El Bouhssini M. 2016.** Spacio-temporal distribution of major Lepidoptera of mint in the Chaouia region. Revue Marocaine de Protection des Plantes, 2016, N° 9 : 1-10.

El Damir M., **El Bouhssini** M., Al Salti M. N. & Abd. Elmoneim A. M. 2016. Adult *Sitona crinitus* H. (Coleoptera: Curculionidae) feeding preference on some legume species. Revue Marocaine de Protection des Plantes, 2016, N° 9: 11-16.

Lhaloui S., **El Bouhssini** M., Otmane R., Ouriniche S. & El Alami A. 2016. Comparative Biology and Life Cycle of the Barley Stem Gall Midge and Hessian fly (Diptera: Cecidomyiidae) in Morocco. Revue Marocaine de Protection des Plantes, 2016, N° 9 : 17-37.

Sabraoui A., **El Bouhssini** M., Lhaloui S., Boulamtat R. & Bouchelta A. 2016. Insecticidal effects of essential oils against chickpea leaf miner, *Liriomyza cicerina R.* Revue Marocaine de Protection des Plantes, 2016, N° 9: 39-46.

Otmane R., Lhaloui S., Osman A., Amamou A., **El Bouhssini** M., Nsarellah N., Gaboun F., Ouriniche S., & Bencharki B. 2016. Selection of new high yield potential bread wheat lines resistant to Hessian fly, *Mayetiola destructor* *(Say),* in Morocco. Revue Marocaine de Protection des Plantes, 2016, N° 9: 47-60.

Ghannoum M.I., **El Bouhssini** M., Nachit M.M. & Kornosor S. 2016. Sources of resistance in durum wheat and its wild relatives to Russian wheat aphid (Hemiptea: Aphididae)*.* Revue Marocaine de Protection des Plantes, 2016, N° 9: 61-67.

Ouriniche S., Hilali A., Lhaloui S., Baidani A., Nsarellah N., Otmane R. & **El Bouhssini** M. 2016. Evaluating the cost and gain from genetic resistance to Hessian fly (*Mayetiola destructor (say))* in durum wheat in Morocco using recombinant inbred lines. Revue Marocaine de Protection des Plantes, 2016, N° 9: 69-81.

El-Miziani I., Lhaloui S., **El Bouhssini** M, Lamiri A.& Gaboun F. 2016. Diagnosis of qualitative and quantitative damage caused by Bruchids on legumes in Morocco. Revue Marocaine de Protection des Plantes, 2016, N° 9: 83-99.

Lina Ali, Mustapha **El Bouhssini**, Abdul Nasser Trissi and Nawal Kahkah. 2015. Susceptibility of some Chickpea accessions to infestation with leaf miner *Liriomyza* *cicerina* Rondani and its impact on yield. Arab Journal of Plant Protection Volume 33 (2), 150-156.

Mui-Keng Tan, Mustapha **El Bouhssini**, Livinus Emebiri, Ossie Wildman, Wuletaw Tadesse, Francis C. Ogbonnaya. 2015. A SNP marker for the selection of HfrDrd, a Hessian fly-response gene in wheat. Molecular Breeding, Volume 35, Issue 11 (doi:10.1007/s11032-015-0410-6)

Staffan C. Andersson, Eva Johansson, Michael Baum, Fawzi Rihawi, and Mustapha **El Bouhssini.** 2015. New resistance sources to Russian wheat aphid (Diuraphis noxia, Kurdjumov) in Swedish wheat substitution and translocation lines with rye (Secale cereale) and Leymus mollis. Czech J. Genet. Plant Breed. 51: 162-165.

Tamer M, Trissi AN, **El Bouhssini** M, Kahkah N. 2015. Survey and biological study of Barley stem gall midge Mayetiola hordei Keiffer (Diptera: Cecidomyiidae) in Syria. Arab Journal of Plant Protection, 33(3): 259-264.

Zhao, C., ….M. **El Bouhssini** et al. 2015. A Massive Expansion of Effector Genes Underlies Gall- Formation in the Wheat Pest Mayetiola destructor. Current Biology 25, 613-620.

Ravi Yandamuri, Ranjeeta Gautam, Charles Darkoh, Vanitha Dareddy, Mustapha **El-Bouhssini**, Beatrice Clack. 2014. Cloning, Expression, Sequence Analysis and Homology Modeling of the Prolyl Endoprotease from Eurygaster integriceps Puton. Insects, 5: 762-782; doi: 10.3390/insects 5040762.

Chitvan Khajuria, Christie E Williams, Mustapha **El Bouhssini,** R Jeff Whitworth, Stephen Richards, Jeffrey J Stuart and Ming-Shun Chen. 2013. Deep sequencing and genome-wide analysis reveals the expansion of MicroRNA genes in the gall midge Mayetiola destructor. BMC Genomics, 14:187.

Joukhadar, R**., El-Bouhssini**, M. Jighly, A. Ogbonnaya, F.C. 2013. Genome-wide association mapping for five major pest resistances in wheat. Molecular Breeding, 1380-3743, [*http://dx.doi.org/10.1007/s11032-013-9924-y*](http://dx.doi.org/10.1007/s11032-013-9924-y).

Kher, S. V., L. M. Dosdall1, H. A. C\_arcamo & M. **El-Bouhssini**. 2013. Antibiosis resistance to cereal leaf beetle, Oulema melanopus (L.) (Coleoptera: Chrysomelidae), in Central Asian wheat germplasm. Journal of Applied Entomology, doi: 10.1111/jen.12074.

Trissi Abdul Nasser, Mustapha **El Bouhssini**, Mohammad Naif Alsalti, Maria von Korff, Aladdin Hamwieh, Margaret Skinner, Bruce L. Parkerand Michel Baum. 2013. Genetic diversity among summer and winter *Beauveria bassiana* populations as revealed by AFLP analysis. Journal of Asia-Pacific Entomology 16 (2013) 269–273.

Chitvan Khajuria, Haiyan Wang, Xuming Liu, Shanda Wheeler, John C. Reese, Mustapha **El Bouhssini**, R. Jeff Whitworth and Ming-Shun Ming Chen. 2013. Mobilization of lipids and fortification of cell wall and cuticle are important in host defense against Hessian fly. Journal: BMC Genomics 2013, 14:423.

Trissi Abdul Nasser, Mustapha **El Bouhssini**, Mohammad Naif Alsalti, Maria von Korff, Aladdin Hamwieh, Margaret Skinner, Bruce L. Parkerand Michel Baum. 2013. Genetic diversity among summer and winter *Beauveria bassiana* populations as revealed by AFLP analysis. Journal of Asia-Pacific Entomology 16: 269–273.

Abdulhai, M., G. Mustapha, M. **El Bouhssini**, M.N. Al Salti and A.N. Trissi. 2012. Some Biological Characteristics of Sunn pest *Eurygaster integriceps* Puton in Northern Syria. Arab Journal of Plant Protection, 30: 153-156.

**El Bouhssini**, M., F. C. Ogbonnaya, M. Chen, S. Lhaloui, F. Rihawi, A. Dabbous. 2012. Sources of Resistance in Primary Synthetic Hexaploid Wheat (*Triticum aestivum* L*.)* to Insect Pests – Hessian fly, Russian wheat aphid and Sunn pest in the Fertile Crescent. Genetic Resources and Crop Evolution, DOI 10.1007/s10722-012-9861-3.

Shahadi, F., M. **El-Bouhssini**, M. Abdulhai and B.P. Parker. 2012. Suitability of Five Prey Aphid Species for Development, Fecundity and Survival of the Predators *Coccinella septempunctata* (L.) and *Harmonia axyridis* (Pallas) Under Laboratory Conditions. Arab Journal of Plant Protection, 30: 261-265.

Khoja, S., M. **El Bouhssini**, R. Malhotra, N. Kakha and M. Abdul Hai. 2012. Categories of Resistance of Some Chickpea Lines to Chickpea Leaf Miner *Liriomyza cicerina* Rondani. Arab Journal of Plant Protection, 30: 208-212.

Trissi, A., M. **El Bouhssini**, M. N. Al Salti, M. Abdulhai, M. Skinner and B. L. Parker. 2012. Virulence of *Beauveria bassiana* against Sunn pest, *Eurygaster integriceps* Puton (Hemiptera: Scutelleridae) at different time periods of application. Journal of Entomology and Nematology 4(5): 49-53.

**El Bouhssini**, M., F. C. Ogbonnaya, H, Ketata, M. M. Mosaad, K. Street, A. Amri, M. Keser, S. Rajaram, A. Morgounov, F. Rihawi, A. Dabus and C. M. Smith. 2011. Progress in host plant resistance in wheat to Russian wheat aphid (Hemiptera: Aphididae) in North Africa and West Asia. Australian Journal of Crop Science 5(9): 1108-1113.

**El Bouhssini**, M., K. Street, A. Amri, M. Mackay, F. C. Ogbonnaya, A. Omran, O. Abdalla, M. Baum, A. Dabbous, and F. Rihawi. 2011. Sources of resistance in bread wheat to Russian wheat aphid (*Diuraphis noxia*) in Syria identified using the Focused Identification of Germplasm Strategy (FIGS). Plant Breeding 130: 96-97.

Parker, B.L., M. Amir-Maafi, M. Skinner, J.S. Kim and M. **El Bouhssini**. 2011. Distribution of Sunn Pest, Eurygaster integriceps Puton (Hemiptera: Scutelleridae), in Overwintering Sites.  J. Asian-Pacific Entomol.14 (1): 83-88.

Abdul Hai, M., M. **El Bouhsinni**, M. Jamal, B. Parker, M. Skinner and Z. Sayyadi. 2011. Characterization and Laboratory Evaluation of Efficacy of Five Isolates of the Fungus, *Paecilomyces farinosus* (Holm.) Brown & Smith on Sunn Pest Overwintered Adults *Eurygaster integriceps* Put. Arab Journal of Plant Protection, 29: 214-218.

Ali, L., M. **El Bouhssini**, S.M. Udupa, M. Baum, M.N. Al Salti. 2010. Genetic variation among Sunn pest (Eurygaster integriceps put.) populations in some countries of West and Central Asia**.** Arab Journal of Plant Protection 28(1): 1-8.

Abdulhai, M., M. **El Bouhssini**, M. Jamal, A.N. Trissi, Z. Sayyadi, M. Skinner and B. L. Parker. 2010. *Beauveria bassiana* Characterization and Efficacy vs. Sunn Pest, *Eurygaster integriceps* Puton (Hemiptera: Scutelleridae). Pakistan Journal of Biological Science, 13: 1052-105.

Darkoh, C., M. **El Bouhssini**, M. Baum, and B. Clack. 2010. Characterization of a prolyl endoprotease from *Eurygaster integriceps* Puton (Sunn Pest) Infested Wheat. Archives of Insect Biochemistry and Physiology 74(3):163-178.

Kutuk, H.; R. Canhilal, M. Islamoglu,A.D. Kanat, and M. **El Bouhssini**. 2010. Predicting the number of nymphal instars plus new-generation adults of the Sunn Pest from overwintered adult densities and parasitism rates.Journal of Pest Science 83(1): 21-25.

Liu, X., J. L. Marshall , P. Stary, O. Edwards , G. Puterka , L. Dolatti, M. **El Bouhssini**, J. Malinga, J. Lage, and C. M. Smith. 2010. Global phylogenetics of *Diuraphis noxia* (Hemiptera: Aphididae), an invasive aphid species: Evidence for multiple invasions into North America. Journal of Economic Entomology 103(3): 958-965.

Trissi, A.N., M. **El Bouhssini**, M.N. Al-Salti, B.L. Parker, M. Skinner and A. Massri. 2010. Efficacy of Some *Beauveria bassiana* Isolates on Sunn Pest, *Eurygaster integriceps* Put. (Hem.: Scutelleridae) and Their Side Effects on its Egg Parasitoid, *Trissolcus grandis* Thomson. Arab Journal of Plant Protection 28: 163-168.

Ali, L., M. **El Bouhssini**, M. N. Al-Salti, J. Valkoun, M. Nachit, O. Abdallah, and M. Singh. 2009. Evaluation of some wheat and its wild relative accessions for resistance to Sunn pest (*Eurygaster integriceps* Put.). Arab Journal of Plant Protection 27 (1): 10-13.

Chen, M. S., X. M. Liu, H.Wang, and M. **El Bouhssini**. 2009. Hessian fly (*Mayetiola destructor*) interactions with barley, rice, and wheat seedlings. Journal of Economic Entomology 102(4): 1663-1672.

**El Bouhssini**, M., K. Street, A. Joubi, Z. Ibrahim, and F. Rihawi. 2009. Sources of wheat resistance to Sunn pest, *Eurygaster integriceps* Puton, in Syria. Genetic Resources and Crop Evolution 56: 1065-1069.

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**Volunteered presentations**

151 volunteered presentations since 1991 (Entomological Society of America 13; International meetings, 86; Regional meetings: 52)

**Invited presentations**

**El Bouhssini** et al. 2018, Gene mining for resistance to pests using the focused identification of germplasm strategy (FIGS): successes and limitations. The 23rd symposium on plant resistance to insects (IPRI) held in Rothamsted, Harpenden, Hertfordshire, UK, 6-9 March.

**El Bouhssini** et al. 2016.Advances in host plant resistance to insect pests of cereals and food legumes in CWANA. International Insects Resistance Sympoisum, Stellenbosch, South Africa 5-8 March, 2016.

**El Bouhssini** et al. 2014. Host Plant Resistance to Insects pests of Cereals and Legumes: Progress made in the past few decades in North Africa, West and North Africa. 2014. Arab Congress of Plant Protection, Amman, Jordan, 9-13 November.

**El Bouhssini,** M., M. Nachit, N. Nsarellah, S. Lhaloui, A. Amri, K. Street , and A. Bari. International Durum wheat conference, **Rome**, Italy, May 2013, .Progress in host plant resistance in durum wheat to insect pests in North Africa, West and Central Asia.

**El Bouhssini**, M., K. Nazari, S. Kemal, and S. Kumari. 2010. Implications of climate change on diseases and pests in North Africa, West and Central Asia. Climate Change and Plant Disease Management Conference, Evora, **Portugal** 10-12 November.

**El Bouhssini**, M., and S. Lhaloui. 2010. International Perspectives on IPM: the CGIAR experience. Integrated Pest Management in Europe (ENDURE) conference, **Paris**, 24-25 November.

**El Bouhssini**, M., M. Jamal, S. Gomez, F. Porcelli, S. Lhaloui,and M. Abdulhai. 2009. Improving Mediterranean cooperation and strengthening national strategies for integrated management of the red palm weevil, *Rhynchophorus ferrugineu.* International Workshop on IPM of Red Palm Weevil, Rabat, **Morocco**, 9 February.

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**El Bouhssini, M.** et al. IPM of cereal and legume insect pests in West and Central Asia and North Africa:

Conference on Organic Farming in the Arab World, Sana’a, **Yemen**, 28 June-1 July, 2008.

Seminars at the **University of Alberta,** April, 2007; Lethbridge Research Center, Ag-**Canada**, January, 2006; Ministry of Agriculture, Doha, **Qatar**, March, 2006; **McGill University**, January, 2005; CIDA (Canadian International Development Agency), January, 2005; **Kansas** **State University**, USDA-ARS, **Oklahoma State University**, Stillwater, **Oklahoma**, **Purdue** **University**, and the **University of Montreal**, December 2003; **University of Bari**, Italy, October 2010; **INRA/CIRAD, Montpelier**, France, November 2010, **Oregon State University**, USA, December 2010, **Kansas State University**, December, 2010; **McGill University,** July 2011; **Stephen F. Austin State University**, November 2011.

**El Bouhssini** M. et al. 2008. Biological control as an IPM component for the control of cereals and food legume insect pests in West and Central Asia and North Africa. Biological Control Workshop, Muscat, **Oman** 3-4 March.

**El Bouhssini**, M., B. James, G. Jahn, H. Sharma and J. Kroschel. International Perspectives on IPM: the CGIAR Experience:

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