



COUNCIL'S NEWSLETTER

Published by The High Council of Moroccan American Scholars and Academics—HC-MASA (www.hc-masa.org)

Volume 5, Issue 8,
July 2018 [No. 16]

The Council Organized the “Fourth International American Moroccan Agricultural Sciences Conference—AMAS Conference IV on May 9—11, 2018 at the Agropolis, Meknes, Morocco

By Abdelmajid Kassem

The High Council of Moroccan American Scholars and Academics—HC-MASA (www.hc-masa.org) in collaboration with the Moroccan National Institute of Agricultural Research (INRA), ACRA (Association des Chercheurs de la Recherche Agronomique du Maroc), and Agronomy and Veterinary Sciences Institute Hassan II (IAV), Rabat, Morocco co-organized the “Fourth International American Moroccan Agricultural Sciences Conference – AMAS IV Conference” on May 9–11, 2018 at the Agropolis in Meknes, Morocco. This international conference on Agricultural Sciences is co-organized every two years in Morocco by Prof. Abdelmajid Kassem, Chair of the Department of Biological Sciences, Fayetteville State University and Prof. Khalid Meksem, Southern Illinois University.

AMAS IV Conference has been attended by students, faculty, and scientists from over 10 countries including Algeria, Saudi Arabia, UAE, France, Portugal, Germany, and United States of America. They contributed over 77 oral and 179 poster presentations.

- ♦ The student Ms. Ikram Mercha of INRA, Rabat won the Best Oral Presentation Award among all students' oral presentations. The value of the award was 1,000 Moroccan Dirhams (MAD).
- ♦ Mr. Reda Melhaoui of College of Science, University Mohamed 1st, Oujda won the 1st Best Poster Presentation Award of 500 MAD and
- ♦ Ms. Rababe Essoufi won the 2nd Best Poster Presentation Award of 500 MAD.

The first edition of this international conference (AMAS I) was held on March 18–19, 2013 in Rabat, Morocco; the second edition (AMAS II) was held on October 20–22, 2018 in Marrakech, Morocco; and the third edition (AMAS III) was held on December 13–16, 2016 in Ouarzazate, Morocco.

Long Live AMAS Conference!

The High Council of Moroccan American Scholars and Academics—HC-MASA will organize the Fifth International American Moroccan Agricultural Sciences Conference—AMAS Conference V on June 15—17, 2020 in Tangier, Morocco!

In This Issue

- AMAS Conference IV
- Articles Published By Council Members
- Prof. My Abdelmajid Kassem STEM Scholarship
- AMAS V Announcement
- The Rosa Genome Sequence
- Dr. Wafaa Mokhtari's Dissertation Defense

Council Members Published Articles (January – July, 2018)

Akond M, J Yuan, S Liu, SK Kantartzi, **K Meksem**, N Bellaloui, **DA Lightfoot**, and **MA Kassem**. QTL that Underlie Seed Protein, Oil, Fatty and Amino Acids Contents in the 'Hamilton' by 'Spencer' Recombinant Inbred Line Population of Soybean. Canadian Journal of Plant Science, Published online February 14, 2018, <https://doi.org/10.1139/CJPS-2017-0204>.

Aromolaran AS, Chahine M, and **Boutjdir M**. Regulation of Cardiac Voltage-Gated Sodium Channel by Kinases: Roles of Protein Kinases A and C. Handb Exp Pharmacol. 2018;246:161-184. doi: 10.1007/164_2017_53.

Chang HX, Roth MG, Wang D, Cianzio SR, **Lightfoot DA**, Hartman GL, Chilvers ML. Integration of sudden death syndrome resistance loci in the soybean genome. Theor Appl Genet. 2018 Apr;131(4):757-773. doi: 10.1007/s00122-018-3063-0. Epub 2018 Feb 12. Review.

El-Sherif N, Turitto G, and **Boutjdir M**. Acquired long QT syndrome and torsade de pointes. Pacing Clin Electrophysiol. 2018 Apr; 41 (4): 414-421. doi: 10.1111/pace.13296. Epub 2018 Mar 30. Review.

Jilal I, El Barkany S, Bahari Z, Sundman O, **El Idrissi A**, Abou-Salama M, Romane A, Zannagui C, Amhamdi H. New quaternized cellulose based on hydroxyethyl cellulose (HEC) grafted EDTA: Synthesis, characterization and application for Pb (II) and Cu (II) removal. Carbohydr Polym. 2018 Jan 15;180:156-167. doi: 10.1016/j.carbpol.2017.10.012. Epub 2017 Oct 7.

Julius BT, Slewinski TL, Baker RF, Tzin V, Zhou S, **Bihmidine S**, Jander G, Braun DM. Maize Carbohydrate partitioning defective1 impacts carbohydrate distribution, callose accumulation, and phloem function. J Exp Bot. 2018 Jul 18; 69 (16): 3917-3931. doi: 10.1093/jxb/ery203.

Kassem MA, A Walters, K Midden, and K Meksem. Proceedings of the Fourth International American Moroccan Agricultural Sciences Conference - AMAS Conference IV, May 9-11, 2018, Meknes, Morocco. Atlas Journal of Biology 2018, pp. 422–545. <https://doi.org/10.5147/ajb.v0i0.175>.

Kirienko AN, Porozov YB, Malkov NV, Akhtemova GA, Le Signor C, Thompson R, Saffray C, Dalmais M, **Bendahmane A**, Tikhonovich IA, and Dolgikh EA. Role of a receptor-like

kinase K1 in pea *Rhizobium* symbiosis development. *Planta*. 2018 Jul 24. doi: 10.1007/s00425-018-2944-4.

Liu J, Williams PC, Geisler-Lee J, Goodson BM, Fakharifar M, Peiravi M, Chen D, **Lightfoot DA**, and Gemeinhardt ME. Impact of wastewater effluent containing aged nanoparticles and other components on biological activities of the soil microbiome, *Arabidopsis* plants, and earthworms. *Environ Res*. 2018 Jul;164:197-203. doi: 10.1016/j.envres.2018.02.006. Epub 2018 Feb 28.

Neuwirth LS, Phillips GR, and **El Idrissi A**. Perinatal Pb²⁺ exposure alters the expression of genes related to the neurodevelopmental GABA-shift in postnatal rats. *J Biomed Sci*. 2018 May 24;25(1):45. doi: 10.1186/s12929-018-0450-4.

Rai MI, Alam M, **Lightfoot DA**, Gurha P, and Afzal AJ. Classification and experimental identification of plant long non-coding RNAs. *Genomics*. 2018 Apr 19. pii: S0888-7543(18): 30245-3. doi: 10.1016/j.ygeno.2018.04.014.

Ramirez-Prado JS, Piquerez SJM, **Bendahmane A**, Hirt H, Raynaud C, and **Benhamed M**. Modify the Histone to Win the Battle: Chromatin Dynamics in Plant-Pathogen Interactions. *Front Plant Sci*. 2018 Mar 19;9:355. doi: 10.3389/fpls.2018.00355. eCollection 2018. Review.

Raymond O, Gouzy J, Just J, Badouin H, Verdenaud M, Lemaître A, Vergne P, Moja S, Choise N, Pont C, Carrière S, Caissard JC, Couloux A, Cottret L, Aury JM, Szécsi J, Latrasse D, Madoui MA, François L, Fu X, Yang SH, Dubois A, Piola F, Larrieu A, Perez M, Labadie K, Perrier L, Govetto B, Labrousse Y, Villand P, Bardoux C, Boltz V, Lopez-Roques C, Heitzler P, Vernoux T, Vandenbussche M, Quesneville H, **Boualem A**, **Bendahmane A**, Liu C, Le Bris M, Salse J, Baudino S, Benhamed M, Wincker P, and **Bendahmane M**. The *Rosa* genome provides new insights into the domestication of modern roses. *Nat Genet*. 2018 Jun;50(6):772-777. doi: 10.1038/s41588-018-0110-3. Epub 2018 Apr 30.

Ruggieri V, Alexiou KG, Morata J, Argyris J, Pujol M, Yano R, Nonaka S, Ezura H, Latrasse D, **Boualem A**, **Benhamed M**, **Bendahmane A**, Cigliano RA, Sanseverino W, Puigdomènech P, Casacuberta JM, and Garcia-Mas J. An improved assembly and annotation of the melon (*Cucumis melo* L.) reference genome. *Sci Rep*. 2018 May 24; 8 (1): 8088. doi: 10.1038/s41598-018-26416-2.

Congratulations to Our Members!
Keep Up The Good Work!

The High Council of Moroccan—American Scholars & Academics to Launch Prof. Abdelmajid Kassem's STEM Scholarship in 2019

The High Council of Moroccan—American Scholars & Academics (HC—MASA) Launches “Prof. My Abdelmajid Kassem Scholarship For Science, Technology, Engineering, and Mathematics – STEM”

At Dr. Abdelmajid Kassem's 50th birthday (7/31/2018), the High Council of Moroccan—American Scholars & Academics (HC—MASA) launches **“Prof. My Abdelmajid Kassem Scholarship for Science, Technology, Engineering, and Mathematics—STEM”**. The Kassem's STEM Scholarship is worth approx. \$1,100 (10,000 MAD) and will benefit one student who graduates from a high school in Agdz City, Zagora Province, Morocco starting the academic year 2018-2019. To be illegible for Prof. A. Kassem's STEM Scholarship, the applicant must:

1. Graduate as one of the top 5 students from a high school in Agdz with the highest GPA (transcripts);
2. Be a resident of Agdz and surrounding areas (Agdz Centre, Agdz Elqasr, Aslim, Tarmasste, Zaouite, Rabat, El Hart, Ouriz, and Tamnougalt);
3. Enroll at any Moroccan University in a STEM Major (Science, Technology, Engineering, and Mathematics);
4. Provide documentation of being in high financial need; and
5. Provide 3 letters of recommendation from his/her high school teachers (2 from science teachers).

The selection process will be done by two committees, one in Morocco and one in the USA. Scholarship funds will be allocated to the winner in two installments of \$550 (5000 MAD) each, the first in September and the second in February (every 6 months).

"منحة البروفسور مولاي عبد المجيد قاسم للعلوم، التكنولوجيا، الهندسة، والرياضيات" لفائدة خريجي الثانويات بمدينة أكادز، عمالة زاكورة ابتداء من السنة الدراسية 2018-2019.



**يعلن المجلس الأعلى للمغاربة الأمريكيين للعلماء
الباحثين والأكاديميين بالولايات المتحدة
الأمريكية عن بداية: "منحة البروفسور مولاي
عبد المجيد قاسم للعلوم، التكنولوجيا، الهندسة،
والرياضيات" لفائدة خريجي الثانويات باكدز**



بمناسبة حلول الذكرى الخمسين لعيد ميلاد الدكتور مولاي عبد المجيد قاسم (31 يوليوز 1968)، يعلن المجلس الأعلى للمغاربة الأمريكيين للعلماء الباحثين والأكاديميين بالولايات المتحدة الأمريكية عن انشاء "منحة البروفسور مولاي عبد المجيد قاسم للعلوم، التكنولوجيا، الهندسة، والرياضيات" لفائدة خريجي الثانويات باكدز. تقدر المنحة بحوالي 1100 دولار امريكي او ما يعادل 10000 درهم وستمنح لتلميذ(ة) حاصل(ة) على شهادة البكالورية في أحد تخصصات العلوم، التكنولوجيا، أو الرياضيات بإحدى ثانويات مدينة أكادز، عمالة زاكورة ابتداء من السنة الدراسية 2018-2019.

شروط الحصول على المنحة هي:

1. الحصول على شهادة البكالورية في أحد تخصصات العلوم، التكنولوجيا، أو الرياضيات بمعدل سنوي عالي وترتيب من بين الطلبة الخمسة المتفوقين،
2. أن يكون الطالب (تكون الطالبة) من مواليد مدينة أكادز والنواحي (أكادز المركز، أكادز القصر، أسليم، ترماصت، الزاويت، الرباط، الحارة، اوريد، وتامنوكالت)،
3. التسجيل بإحدى الجامعات المغربية في أحد تخصصات العلوم، التكنولوجيا، أو الرياضيات،
4. أن يكون الطالب (تكون الطالبة) من أسرة معوزة في حاجة مادية،
5. أن يقدم الطالب (تقدم الطالبة) ملف ترشيح مرفوقا بثلاثة رسائل توصية إثنين منها من أساتذة العلوم، (Lettres de recommandation) التكنولوجيا، أو الرياضيات.

وستتم عملية فرز الطلبات بواسطة لجنيتين الأولى بالمغرب والثانية بالولايات المتحدة الأمريكية. وسترسل المنحة للطالب(ة) الفائز(ة) بواسطة دفعتين: 5000 درهم في شهر شتنبر (الدخول الجامعي)، و 5000 درهم في شهر فبراير أي بعد 6 أشهر من الدفعة الأولى.

The Rosa Genome Sequence Published By French-Moroccan Researchers



Mohammed Bendahmane, PhD
Directeur de Recherche
Laboratoire Reproduction et Développement des Plantes
Ecole Normale Supérieure de Lyon, France

The article below authored by three Council members (see below in bold) and published in the famous International Journal "Nature Genetics" had a buzz in the News around the world especially in Europe and the USA.

Raymond O, Gouzy J, Just J, Badouin H, Verdenaud M, Lemainque A, Vergne P, Moja S, Choisine N, Pont C, Carrère S, Caissard JC, Couloux A, Cottret L, Aury JM, Szécsi J, Latrasse D, Madoui MA, François L, Fu X, Yang SH, Dubois A, Piola F, Larrieu A, Perez M, Labadie K, Perrier L, Govetto B, Labrousse Y, Villand P, Bardoux C, Boltz V, Lopez-Roques C, Heitzler P, Vernoux T, Vandenbussche M, Quesneville H, **Boualem A, Bendahmane A**, Liu C, Le Bris M, Salse J, Baudino S, Benhamed M, Wincker P, and **Bendahmane M**. The Rosa genome provides new insights into the domestication of modern roses. Nat Genet. 2018 Jun; 50 (6): 772-777. doi: 10.1038/s41588-018-0110-3. Epub 2018 Apr 30.

New York Times, USA: "How a Rose Blooms: Its Genome Reveals the Traits for Scent and Color" [<https://www.nytimes.com/2018/04/30/science/rose-genome-gene-editing.html>].

The Independent, UK: "Decoding rose DNA could allow scientists to create flowers that look and smell better" [<https://www.independent.co.uk/news/science/rose-dna-genome-gene-sequence-flowers-breeding-a8329711.html>].

Irish Examiner: "Rose genome sequence could lead to improved blooms" [<https://www.irishexaminer.com/breakingnews/world/rose-genome-sequence-could-lead-to-improved-blooms-840079.html>].

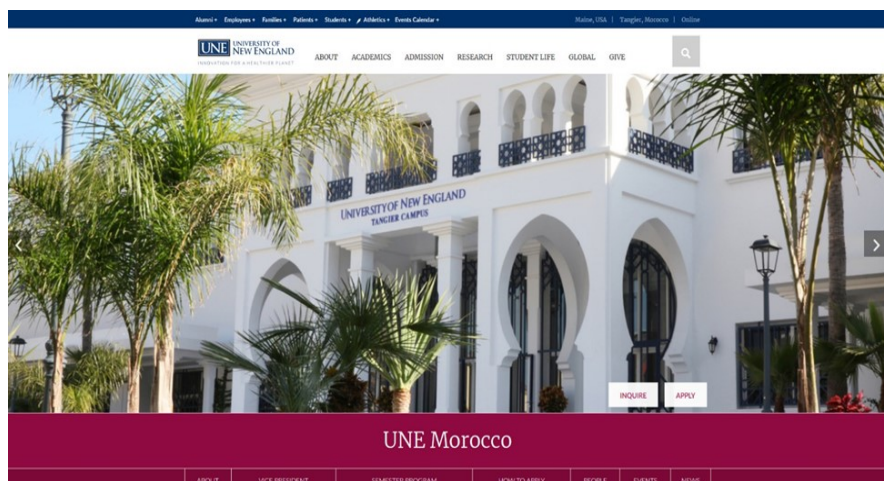
Good Job Mohammed and the Rest of the Research Team!



Facts About The Rosa Genome Article:

- The Rosa genome has approx. 36,377 Genes
- Among important Rosa traits are scents, Capacity to flower multiple times, flower color, etc.
- Cultivated roses descend from about 150 wild species
- Genes that control water use efficiency, petals color, and scent have been identified

The Fifth International American Moroccan Agricultural Sciences Conference – AMAS V Conference will be held on June 15–17, 2020 in Tangier, Morocco



The High Council of Moroccan American Scholars and Academics—HC-MASA (www.hc-masa.org) in collaboration with the University of New England, Tangier Campus will organize **“The Fifth International American Moroccan Agricultural Sciences Conference – AMAS V Conference – www.amas-conference.org”** on June 15–17, 2020 at the University of New England, Tangier Campus (<https://www.une.edu/morocco>) in Tangier, Morocco.

The Co-Organizers, Prof. Khalid Meksem of Southern Illinois University, USA and Prof. My Abdelmajid Kassem of Fayetteville State University, USA joined by the host Prof. Anouar Majid of the University of New England, Tangier expect 350+ attendees (faculty, students, scientists, and agriculture specialists) from Morocco and around the world during this fifth edition of the conference.

This first edition of this international conference (AMAS I) was held on March 18–19, 2013 in Rabat, Morocco; the second edition (AMAS II) was held on October 20–22, 2018 in Marrakech, Morocco; the third edition (AMAS III) was held on December 13–16, 2016 in Ouarzazate, Morocco; and the fourth edition (AMAS IV) was held on May 9–11, 2018 at the Agropolis in Meknes, Morocco.



Dr. Wafaa Mokhtari Defended Her PhD Dissertation

Congratulations to Dr. Wafaa Mokhtari who defended her PhD dissertation on Tuesday July 17, 2018 at The Institut Agronomique et Vétérinaire (IAV) Hassan II, Complexe Horticole d'Agadir, Agadir, Morocco. The dissertation title was: ***"Isolation, Identification, and Evaluation of Biocontrol Potential of Some Trichoderma Species Isolated from Moroccan Soils Against Major Soil-Borne Fungal Pathogens"***. The dissertation committee was composed of:

Pr. Mohamed ACHOURI, Professor, DPP/ IAV Hassan II, Dissertation Director

Pr. Abdellah REMAH, Professor, DPP/ IAV Hassan II, Dissertation Committee Member

1. Pr. Hassan BOUBAKER, Professor, DB/ Ibn Zohr University, Dissertation Committee Member
2. Pr. Nouredine CHTAINA, Professor, DPP/ Ibn Zohr University, President
3. Pr. Hassan BOUDYACH, Professor, DPP/ Ibn Zohr University, Dissertation Examiner
4. Pr. Mohamed amine SERGHINI, Professor, DPP/ IAV Hassan II, Dissertation Examiner

Wafaa was one of our AMAS Conference Coordinators in Morocco for AMAS IV in Meknes, Morocco.



Congratulations Wafaa; We are Proud of You!

Abstract—"The aim of this thesis is to identify at species level and investigate in vitro and in vivo screening methods to evaluate antagonistic and biocontrol potential of three *Trichoderma* species isolated from Moroccan soil (natural and agricultural habitats) against soil-borne pathogens of economic importance. Phylogenetic analysis of *tef1* gene in *Trichoderma* isolates provides a cost effective and highly sensitive identification tool since it allowed us to identify three *Trichoderma* species; *T. afro-harzianum*, *T. guizouhense* and *T. reesei* avoiding genetic integrated approaches. Thereafter, in vitro screening using dual culture test was meant to select the best performing antagonistic candidates among *Trichoderma* isolates against soil-borne pathogens; *Rhizoctonia solani*, *Verticillium dahliae*, *Fusarium solani* and *Phytophthora capsici*. In this study, *Trichoderma* species showed antagonistic activity against different pathogens with the highest Percentage of Inhibition of Radial Growth (PIRG %) = 84.7% when *T. afro-harzianum* confronted *Phytophthora capsici*. The lowest PIRG% was 57.04% when *T. afro-harzianum* confronted *Rhizoctonia solani*. Mycoparasitic coiling sign and mycelium pathogen degradation clearly exhibited mycoparasitic interaction of *Trichoderma afro-harzianum* against *Phytophthora capsici* and *Rhizoctonia solani*. In vivo, root-dipping approach was involved in revealing *Trichoderma* biocontrol potential and efficacy towards soil-borne pathogens and provided insight onto *Trichoderma*-plant interactions involved. In fact, *T. afro-harzianum* (T8A4) succeeded to control blight pepper caused by *Phytophthora capsici* with disease assessed in root units (DI-RU) = 0.0 % compared to other disease incidence recorded; 12.5 % when treating roots with *T. reesei* (T9i12) and 6.3 % when treating with *T. guizouhense* (T4). DI-RU in green beans infected with *Fusarium solani* was reduced with only 25 % and 18.8 % in green beans treated with *T. guizouhense* and *T. afro-harzianum* respectively. *Verticillium* disease in eggplants was alleviated with DI-RU = 12.5 %, 31.3 % and 37.5 % treating with *T. guizouhense*, *T. afro-harzianum* and *T. reesei* respectively. Interestingly, *Trichoderma reesei* which is known to be industrial cellulase producer was able to control *Rhizoctonia solani* root disease in green beans with 0.0 % disease incidence assessed. Moreover, plant parameters like plant height, leave surface area and dry weight of roots and whole plants supported disease assessment results. Another aspect of evaluating *Trichoderma* biocontrol efficacy was examining induced systemic resistance (ISR) of *Trichoderma* spp. in *Rhizoctonia*-green beans pathosystem using split root system (SRS) technique. The control of *Rhizoctonia* disease by *Trichoderma* spp. has been interpreted as a systemic response primed in host green beans." Provided by Dr. Wafaa Mokhtari.



Congratulations Wafaa; We are Proud of You!

The Council's Newsletter

Visit Our Website!

<http://hc-masa.org>

Like us on Facebook!

<https://www.facebook.com/hcmasa.org>

Follow us on Twitter!

https://twitter.com/hc_masa

Contact

HC-MASA
971 Pepperwood Drive
Fayetteville, NC 28311
USA
(910) 745 2047
abdelmajidk@gmail.com

The Council's Newsletter is Published By The High Council of Moroccan American Scholars & Academics (HC-MASA)

BOARD OF DIRECTORS

The Current Board of Directors Was
Elected for Two-Year Term (2016-2018)

President: Khalid Meksem, SIUC, USA

Vice-President-USA & Treasurer: Abdelmajid Kassem,
Fayetteville State University, USA

Vice-President-Europe: Abdelhafid Bendahmane, INRA, France

Vice-President-MENA Region & Africa: Abdelhamid El Mousadik,
Ibn Zohr University, Morocco

Secretary: Saadia Bihmidine, University of Texas, Arlington, USA

Member at Large: Mohamed Boutjdir, SUNY, USA

Member at Large: Abdeslem El Idrissi, CUNY, USA

Contact Us:

Give us a call for more information about our services and/or to join us:

HC-MASA

**971 Pepperwood Drive
Fayetteville, NC 28311
USA**

Tel: +1 (910) 745-2047

info@hc-masa.org, or
abdelmajidk@gmail.com

Visit us on the web at:
www.hc-masa.org

Volume 5, Issue 8, July 2018