

MOHAMAD BAHAGIA BIN AB GHAFFAR, PhD

PERSONAL PARTICULARS



NAME: MOHAMAD BAHAGIA BIN AB GHAFFAR
NO. I/C: 690627075489 (A1359649)
DATE OF BIRTH: 27th June 1969
PLACE OF BIRTH: Kepala Batas, Pulau Pinang
GENDER: Male
CITIZENSHIP: Malaysia

CURRENT OCCUPATION: Senior Scientist Officer

CURRENT EMPLOYER: Director General of MARDI

CURRENT OFFICIAL ADDRESS: Stesen Penyelidikan Padi
Jalan Paya keladi
Beg Berkunci No. 203
Pejabat Pos Kepala Batas
13200 Seberang Perai Utara

RESIDENTIAL ADDRESS: 1 Jalan Seri Indah
Taman Seri Indah
13200 Kepala Batas
Seberang Perai Utara
Pulau Pinang
Malaysia

PERMANENT ADDRESS: 4577 Kampung Paya
13200 Kepala Batas
Seberang Perai Utara
Pulau Pinang
Malaysia

TELEPHONE NO: 016-2030020
E-MAIL ADDRESS: bahagia@[mardi.gov.my](mailto:bahagia@mardi.gov.my) ,
bah_gia@hotmail.com

EDUCATION BACKGROUND

ACADEMIC:

1. PhD in Biosciences (2012). Universiti of Birmingham, United Kingdom
2. M.Sc of Agric (1988). Universiti Putra Malaysia, Selangor
3. B.Sc of Agric (1994). Universiti Pertanian Malaysia, Selangor
4. Dip.Sc of Agric (1990). Universiti Pertanian Malaysia, Selangor

OTHER MAIN PROFESSIONAL COURSES ATTENDED:

1. Transgenic workshop on PRSV resistant plant. 15-18/1/2001. Organized by SENR MARDI Research Center Serdang, Selangor
2. Application SAS Courses for Statistic and Writing Skill. 21- 24/5/2001 Organized by MARDI Serdang.
3. The Banana Leaf Spot Disease Workshop. 18-22/6/2001. Organized by MARDI and INIBAP, Palm Garden, Selangor)
4. Genetically Modified Organisms (GMO): Current Status and Technologies. 5-9/11/2001. Organized by UPM at Palm Garden, Serdang, Selangor.
5. National Biotechnology Workshop. "Applications of induced Mutation and Molecular Tools in Horticultural Crops including Ornamentals Plants. 7-12/10/2002. organized by MINT-TECH Park, Bangi, Selangor
6. Cryopreservation Workshop (16-18/7/2003). Organized by University Malaya, Kuala Lumpur
7. Management Germplasm Information System Workshop. (15-19/12/2003). Organized by MARDI Serdang, Selangor
8. A Training Course in Fluorescent in situ hybridization (FISH). Application to Diversity Analysis (5-9/1/2004). Organized by University Malaya, Kuala Lumpur.
9. Regional RCA Training Course on Induced Mutations for Crop Quality Improvement (30/8-8/9/2004). Organized by IAEA and CAAS, Beijing, China 2004.
10. National Training course on advanced Molecular Breeding for selection of trait under climate change (15th to 19th October 2012, MINT, Bangi Selangor)
12. Real Time PCR Workshop 2012-Getting Started with qPCR assays. (18th to 19th April 2012, UMC, Bukit Jalil, Kuala Lumpur)
13. International Atomic Energy Agency (IAEA) Fellowship Training Program (2nd September – 1st November 2013, Bangor university, United Kingdom).
14. Kursus Teknikal Pengurusan Perosak, Penyakit dan Rumpai Tanaman Padi
15. Genome Wide Association Analysis (GWAS) Course (17th to 28th Nov 2014)
16. Passion for Extraordinary leadership Performance course (11th to 12 Feb 2016)
17. DNA finger printing and population genetic analysis workshop (21st to 22nd March 2016)

WORKING EXPERIENCES

1. Assistance Research Officer, Department of Agronomy and Horticulture, Agriculture Faculty, UPM (1994-1996)
2. Transmission Controller Officer, MEASAT Broadcast SDN BHD (1996-2000)
3. Research Officer (Pineapple and Citrus breeder). Horticulture Research Centre, MARDI Kluang Station (2000-2012).
4. Senior Research Officer (Rice Molecular Breeder). Rice and Industrial Crops Research Center, MARDI seberang Perai, Penang (Present)

FIELDS OF SPECIALIZATION

Conventional and Molecular Plant Breeding: focusing on Biotic and Abiotic problem in rice

RESEARCHES

CURRENT RESEARCH PROJECTS:

1. Incorporation of BLB resistant genes into MARDI elite Varieties using Marker Assisted Selection (MAS) and Background Marker (MAB) approach (Project leader, EPP14, CMDV)
2. Application of Marker Assisted Selection (MAS) to Introgress multiple pest and disease resistant genes into the Malaysian Elite Rice Varieties. (Project leader, Flagship DISTN, MOSTI)
3. MARDI-BASF collaboration project on the development of local rice varieties tolerant to herbicide imidazolinone (Project Leader, Collaboration Project)
4. Development of inbred and hybrid production rice technology for increasing National rice SSL level (Sub project leader, Rmke-11 Development Fund)
5. Development of Fingerprinting SNP Panel for Malaysian Rice Varieties (Collaborator, EPP14, CMDV)
6. Development of new rice variety tolerance to climate change problem (Collaborator, Rmke-11 Development Fund)
7. Evaluation of grain corn varieties, corn production systems and the use of local grain corn in animal feed (Sub-Project leader under Sumber Kekayaan Baru (SKB) Fund)

PAST RESEARCH PROJECTS:

1. Selection and Validation of Candidate BPH Resistance Genes for Quantitative Real-Time RT-PCR In Rice Based on Transcriptomics Data (2013 - WRM project, leader)
2. Transcriptomics Analysis of Phloem-Feeding Insect Resistance in Rice Germplasm. Phd project
3. Introgression of Bph3 gene Controlling Brown Planthopper Resistance into the Malaysian Elite Rice Varieties Using Marker Assisted Breeding Approach (Project leader, EPP14, CMDV)
4. Selection of early breeding Improvement variety MR219 and MR269 Lines against blast disease using Molecular breeding approaches (Project leader, EPP14, CMDV)
5. Evaluation and selection of pomelo mutants for low stature and improved fruit quality (01-03-03-0090-EA001, project leader)
6. Variability of chemical in pineapple germplasm and its relation to Black Heart Disorder. (01-03-03-0028-PR0050/08-01, Project leader)
7. Somaclonal Variation and selection for improvement and selection in Josapine (01-03-03-0029- PR 0050/08-02-collaborator)
8. Clonal evaluation of selected citrus sp for fruit qualities. (Mardi Internal Fund-project leader)
9. Screening MARDI Citrus germplasm for greening disease tolerance . (Strategic Research project-Collaborator)
10. Pembangunan teknologi padi aerob bagi mengatasi masalah kekurangan air. (Sub Projek MEGA P139, Sub project Leader)
11. Pembangunan varieti padi inbred dan hibrid berhasil tinggi dan rintang penyakit- Marker development (Projek Mega Pembangunan 140) (Sub-sub project Leader)
12. Pest, disease and weed for fragrant rice production system in non-granary areas. (Sub projek EPP9, Collaborator)
13. Improvement of selected popular varieties (MR 219, MR276, MR232) for resistance to major pests (BPH) and diseases (Blast and tungro) resistance by using marker assisted selection (MAS) (Sub- EPP10, RI1.4.3.2: Collaborator)
14. Identification of QTL markers for drought and aerobic adapted tolerant trait in rice (BT0.1.8, Sub-EPP14 project, Collaborator)
15. Identification and validation of functional marker within broad spectrum resistance gene Pi9 conferring resistance to blast disease in rice (Collaborator)
16. Development of Early Maturing and High Yielding Rice Progenies. (E-science, collaborator)

PUBLICATIONS:

1. Laporan Khas Potensi Penanaman Jagung Bijian Di Malaysia: Pengalaman MARDI (March 2019-Editor)
2. Performance of current commercial grain corn hybrids on three different locations. Regional Corn Conference (RCC2019), Ixora Hotel, Penang, 26-28 February 2019.

3. Association Study of QTLs Reference Markers Link to BPH Resistant Genes in F2 Population of a Cross Involving Rathu Heenati and MR219. MSTE 2018, 19-21 Oct 2018 Ayer Keroh Melaka.
4. Development of near isogenic lines carrying Bph3 resistance genes to Brown Planthopper into MR 269 variety. Scenia MARDI, 2018
5. Effects of preanthesis drought stress on yield components and seed quality of rice (*Oryza sativa* L.). Malays. Appl. Biol. (2018) 47(5): 149–155
6. Evaluation of Resistance Level in BC3F4 Population Carrying Broad-Spectrum Pi9 Gene Against Blast Disease Derived from MR220 x IRTP21683. 4TH INTERNATIONAL PLANT BREEDING CONFERENCE (IPBC2018), 13-15 Nov 2018, Bangi Putrajaya Hotel, Selangor, Malaysia.
7. Traits Performance and Heterosis Estimation in F1 Rice Generations Crossed Between Basmati 370 and Selected Malaysian Rice Varieties. Journal Tropical Agricultural Science (JTAS) Manuscript ID is JTAS-1166-2017.R2
8. Development of New Early Maturing Rice Variety (EMRV) of Rice (*Oryza sativa* L.). MARDI Science & Technology Exhibition -MSTE 2017 (18 – 19 SEPTEMBER 2017, MAEPS Serdang Selangor).
9. Identification Resistance Level of Rice Varieties with Different *Pyricularia oryzae* Pathotype of Blast Disease. 12th Malaysian International Genetic Congress (MIGC 12), 25-27 September 2017, Hotel Bangi-Putrajaya, Persiaran Bandar, Bandar Baru Bangi, Selangor, Malaysia.
10. Penilaian Awal Prestasi Titis-titis Padi Matang Awal di MARDI. Proceeding Persidangan Padi Kebangsaan 2017(26 - 28 September 2017 • Dorsett Grand Subang, Selangor)
11. Identification of candidate genes involved in brown planthopper resistance in rice using microarray Journal of Tropical Agriculture and Food Science (Volume 44 No. 1, 2016)
12. Improvement of MARDI Elite Variety MR269 against Brown planthopper using foreground and background markers selection. Poster paper at IPBC2016, 14-15 Nov 2016
13. Application of marker assisted breeding for the Improvement of MR219 rice variety against blast disease. Malaysian . MARDI Science & Technology Exhibition (MSTE) 2016
14. Development of near-isogenic lines carrying Bph3 resistance genes to Brown Planthopper with the MR 269 genetic background based. MARDI Science & Technology Exhibition (MSTE) 2016
15. Heterosis in F1 Generation of Selected Malaysian Local Rice Varieties Cross with Indian Traditional Rice Basmati 370. Poster paper at IPBC2016, 14-15 Nov 2016. (Co-author)
16. Application of marker assisted breeding for the improvement of Malaysia Rice variety against Brown Planthopper attacks. The 3rd Plant Genomics Congress Asia – April 2016 (Co-author)
17. Improvement of Malaysian Rice Variety against Blast Disease using Marker Assisted Breeding Approach. during Advanced Breeding Seminar 22-25 November 2016, Japan (Co-author)
18. Physicochemical characterization of Malaysia's rice in seeking potential parents for quality rice breeding program Poster paper at IPBC2016, 14-15 Nov 2016. (Co-author)

19. Evaluation and Validation of BC3F4 Population from Backcrossing Program Carrying Blast Resistance, Pi Gene with SSR Marker. Poster paper at IPBC2016, 14-15 Nov 2016. (Co-author)
20. Fruit Quality Evaluation of Harumanis Variants at Sintok, Kedah, Malaysia. Poster paper at IPBC2016, 14-15 Nov 2016. (Co-author)
21. Breeding model for development of super resistant rice varieties (THE 11TH MALAYSIA GENETICS CONGRESS, Perdana University, Serdang, 12- 13 August 2015)
22. Genetic Diversity of Early-Maturing Rice Varieties (EMRV) in MARDI (THE 11TH MALAYSIA GENETICS CONGRESS, Perdana University, Serdang, 12- 13 August 2015)
23. Improvement of MARDI Elite Variety MR219 against blast disease using foreground and background markers selection. (The 2nd Plant Genomics Congress Asia March 19-20, 2015, Renaissance Kuala Lumpur Hotel, Malaysia)
24. Growth performance and feeding behaviour of *Rhopalosiphum padi* on rice (J. Trop. Agric. and Fd. Sc. 42(1)(2014): 000-M0.0B0.A)
25. Transcriptomic Analysis of Susceptible, Moderately Resistant and Resistant Rice Varieties to Brown Planthopper Plant Breeding Seminar: Advances in Plant Improvement. 3 - 5 July 2012, Conference Hall, Agro-Biotechnology Institute Malaysia, Serdang, Selangor, Malaysia Kertas Seminar Teknikal
26. Brown Planthopper (*N. lugens* Stal) Feeding Behaviour on Rice Germplasm as an Indicator of Resistance PLoS One. 2011; 6(7): e22137 Jurnal Antarabangsa 2011
27. Transcriptomic Analysis of Susceptible, Moderately Resistant and Resistance Rice Varieties to Brown Planthopper SCI Conference, University of Reading Kertas Seminar Teknikal 2010
28. Feeding behaviour of Brown Planthopper on different rice varieties using EPG and the honeydew clock Biosciences Graduate Research school (BGRS) Seminar, University of Birminmingham, 2009 Kertas Seminar Teknikal 2009
29. Phloem Sap Ingestion by Brown Planthopper is Reduced on Resistant Rice Varieties. 6th International Rice Genetic Symposium, Manila Hotel, Philippine Kertas Seminar Teknikal 2009
30. Characterization of the feeding behavior of the bird cherry-oat aphid (*Rhopalosiphum padi* (L.)) on different ages of rice plant using electrical penetration graph (EPG) International conference: Plant intractions with aphids and other insects with peircing mouthparts. Wageningen University, Netherlands. 18-20 August 2008 Kertas Seminar Teknikal 2008
31. Pomelo (*Citrus maxima*) MARDI publication Buku Ilmiah 2008
32. Studies on changing qualities in 5 commercial pineapple varieties and its relationship with the occurrences of postharvest problem after storages National Horticulture Conference, Pan Pacific, Johor, 2007 Kertas Seminar Teknikal 2007
33. Genetic diversity of *Psidium* species for resistance to root-knot nematode Paper for National Conference on Agrobiodiversity Conservation and Sustainable Utilization Kertas Seminar Teknikal 2006
34. Melomas MARDI publication Buku Ilmiah 2005.
35. Preliminary growth performance of selected mutant pomelo Genetic Congress, Kuala Lumpur Kertas Seminar Teknikal 2005

36. Screening MARDI's pineapple collection for black heart disorder resistance
MARDI technical report MARDI Report / MARDI Special Report 2005
37. Selection and Evaluation of Pomelo Mutants induced by Irradiation Senior Staff Meeting Expo 21-23th December 2005. MITC Melaka. Kertas Seminar Teknikal 2005
38. Variability in chemical contents of pineapple germplasm at MARDI The 5th International Pineapple Symposium 11-15 April 2005, Port Alfred, South Africa Kertas Seminar Teknikal 2005
39. Variation of papaya fruit characters at MARDI's germplasm First International Symposium on papaya. Papaya For the World. Genting Highland, Pahang, 22-24 Nov, 2005 Kertas Seminar Teknikal 2005
40. BUSINESS PROPOSAL FOR THE COMMERCIAL CULTIVATION OF POMELO (Citrus maxima) MARDI publication MARDI Business Proposal 2004
41. Evaluation of micronutrient content in 9 varieties of pineapple fruit. MARDI technical report MARDI Report / MARDI Special Report 2004
42. Variability in Vegetative Character of Pineapple Germplasm MARDI technical report MARDI Report / MARDI Special Report 2004
43. Pomelo Improvement using Gamma Irradiation: Preliminary Studies. National Genetic Conference, Legend Hotel, Kuala Lumpur Kertas Seminar Teknikal 2003
44. Genetic variability in nutritional contents of sweet potato (Ipomoea batatas (L) Lam.) germplasm from Malaysia National Horticulture Conference. Equitorial Hotel, Bangi, Selangor Kertas Seminar Teknikal 2003
45. Preliminary evaluation on plant morphology, fruit quality and consumers' acceptability of mutant pomelo MARDI technical report MARDI Report / MARDI Special Report 2002
46. Mutation breeding in Pomelo: Preliminary observation on plant morphology fruit quality and consumer's acceptability. Malaysian Society of Plant Physiology Conference 2001. Tropical Plant Biology: Interfacing Basic and Applied Aspects of Research on 29 Sept. 2001. MINES Beach Resort, KL Kertas Seminar Teknikal 2001

KEGIATAN BADAN PROFESIONAL

1. Persatuan Kakitangan Kanan MARDI (MASSA), Member, 2001-2016
2. Kelab Hortikultur, MARDI . Member, 2001-2007
3. Persatuan Genetik Malaysia. Committee Member, 1995-2016
4. Persatuan Sukan dan Kebajikan MARDI Kluang, member, 2002-2006
5. Kelab Melayu Golf Kluang. Committee, 2004-2006
6. Persatuan Sukan dan Kebajikan MARDI Seberang Perai, member, 2011-2016